THE ARCHITECT & BUILDING NEWS

New Year Number

JANUARY 24, 1952 · VOLUME 201 · NUMBER 4336 · ONE SHILLING WEEKLY

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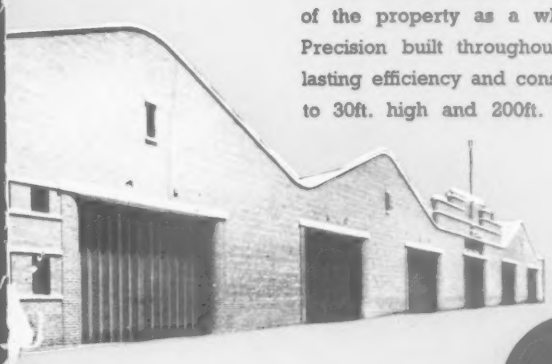

The photograph on the left shows six pairs of Bolton Shutter Gates erected at the premises of Messrs. Rowe Bros. & Co. Ltd., Leeds Street, Liverpool.

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The thermal conductivity (K) of standard quality Sprayed "LIMPET" Asbestos is 0.4, but when required, special grade fibre can be employed to provide a K value as low as .32 (N.P.L. test).

"The sound absorption coefficient for 1" thickness at a frequency of 500 cycles per second is 0.65" (N.P.L. Test).

The inset shows Sprayed "LIMPET" Asbestos on barrel roofs at Extensions to The Spode Works, Stoke-on-Trent.

Architects: Messrs. Hind & Brown L. A.R.I.B.A.

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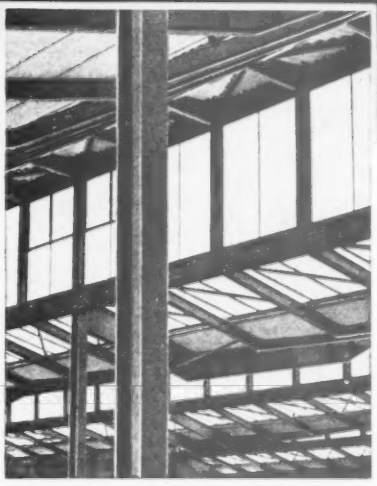

N.A.A.F.I. WAREHOUSE,
FRATTON

Architects: Messrs. Joseph.

Consulting Engineer: A. Laird Hair, Esq.

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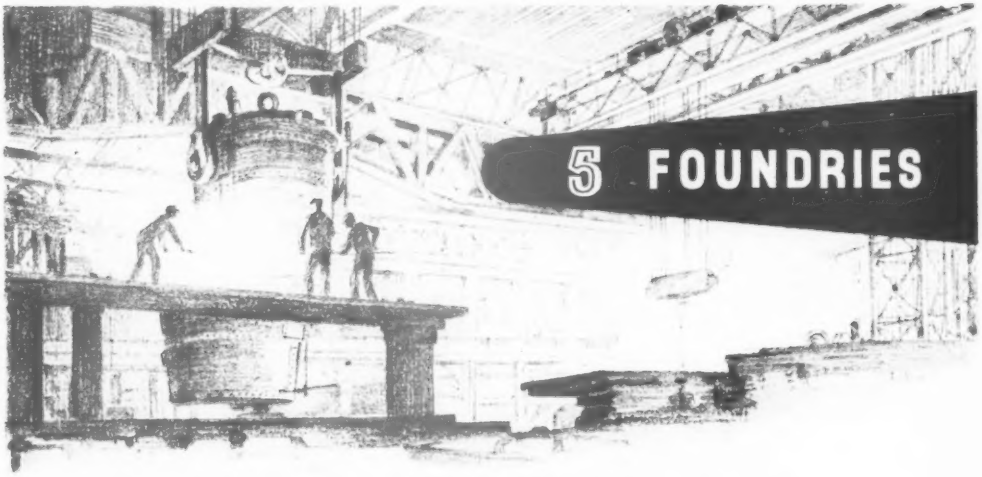

SANDERS "SUPERIOR"

In quite a large number of foundries, electrical switches are frequently operated by the ungentle hands of men skilled in the tougher side of production, and may it be whispered, sometimes with the nearest available implement. In such situations one so very often encounters the encircled (S) and superscription which marks the Sanders Superior Switch.

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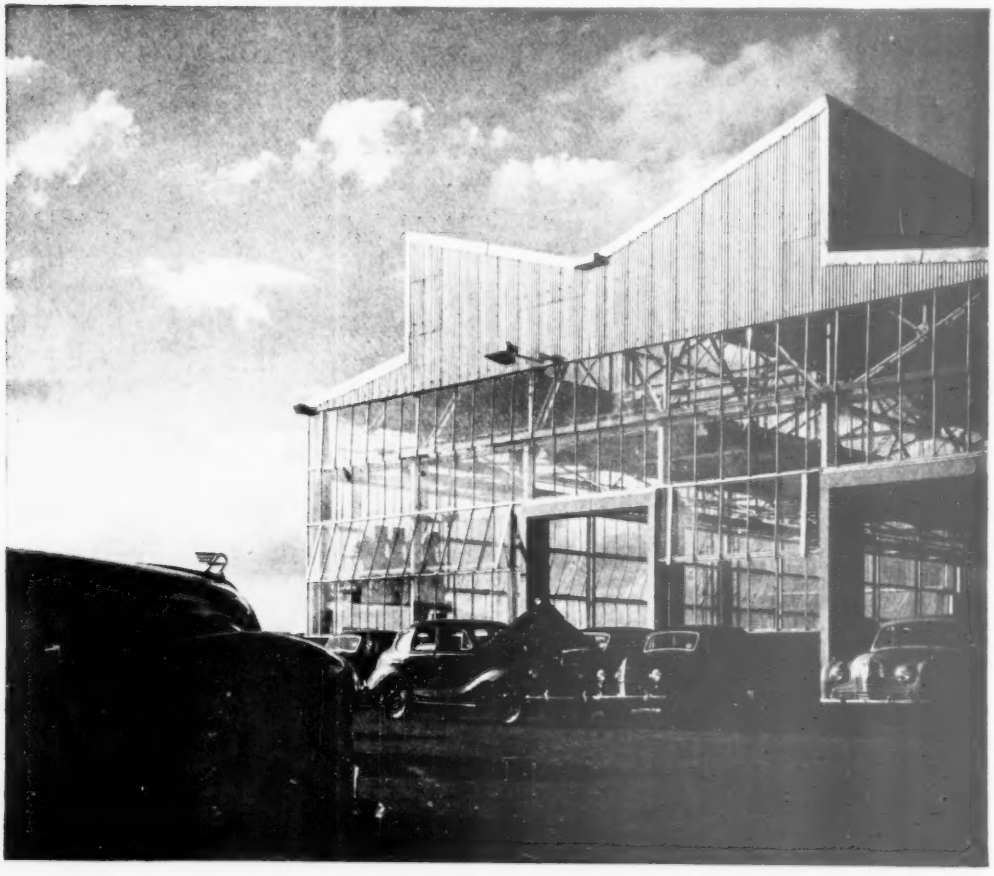
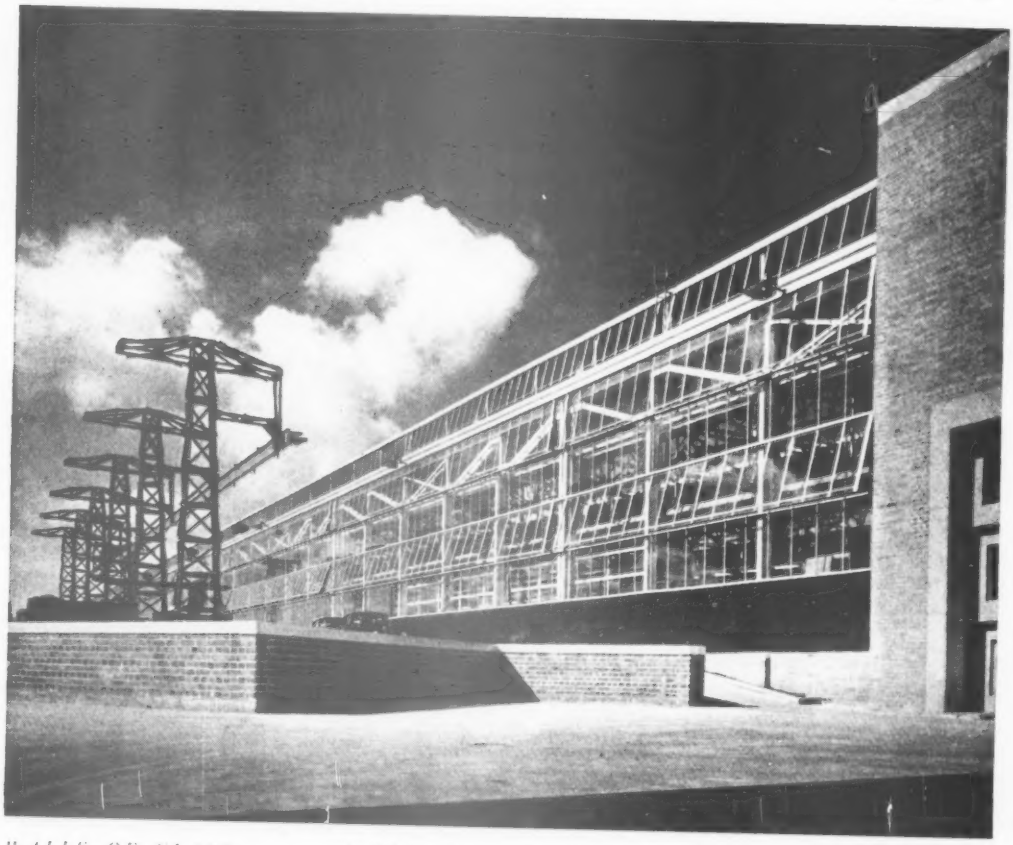
GLASS WALLS *in the new Austin Extensions...*

A FRESH EXAMPLE OF THE GRACE AND EFFICIENCY OF ALUMINEX PATENT GLAZING

Our pictures show Aluminex Patent Glazing to advantage and the æsthetic effect of the 900 ft. glass wall is a tribute to architect C. Howard Crane's use of this medium in his new Car Assembly Building at the Austin Factory, Longbridge. Strong enough to resist the full force of Atlantic gales, durable enough, like Piccadilly's Eros, to stand the wear of years, light enough to be handled with ease, clean cut and attractive in its lines — Aluminex is a working material for architects to conjure with.





WALLS OF GLASS

The 900 × 20ft. wall of glass can be dismantled and re-assembled when the time comes for further extensions. This is only one of the important advantages offered by Aluminex.

TELEFLEX GEARING

Opening lights 5ft. deep by 58ft. run into two tiers along the whole length of the building. Each pair of adjacent lights is easily operated by Teleflex gear from one manual control at floor level, 116ft. of sidewall opening in 15 seconds. Teleflex — a new development in cable gearing — was originally used for turret operation on bombers and battleships in the last war. It is a classic example of how the swords of war become the ploughshares of industry.

VERTICAL MONITOR LIGHTS

The vertical monitor lights in the roof are arranged so as to give even daylighting throughout the building and contain continuous opening lights exactly similar to those in the sidewall.

56,000 SQUARE FEET OF GLASS

Both the sidewalls and the monitors are glazed with 32 ounce clear sheet glass, which, combined with the delicate aluminium tracery of Aluminex Patent Glazing, has produced a delightful effect of airiness and spaciousness. In all, 56,000 square feet of glass were used in the cladding of this building.

USE OF ALUMINEX WEATHERING MEMBERS

Only Aluminex can produce the clean effect at the junction of the trim of glass in the sidewall. These firm modern lines are due to the Aluminex horizontal weathering members.

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Section of Roof showing Gutters and Outlets

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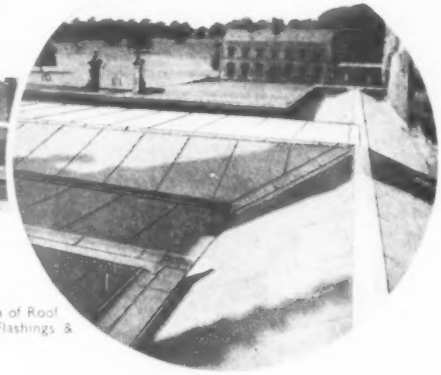

Another Section of Roof showing Hips, Flashings & Gutters

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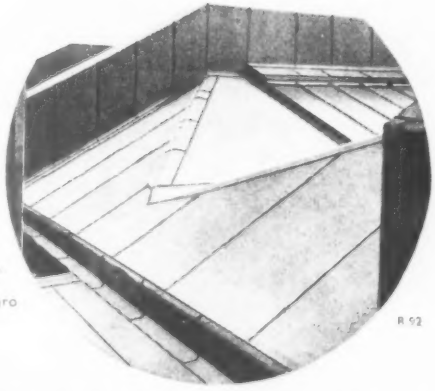

Section of Roof of Macfarlane Lang & Co. Ltd., Osterley. Architects: James M. Monro & Son.

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The illustrations are of a recent conversion at Abbey House, Victoria, London, S.W.1. Architects: Boreham Snow & Wallace, London, W.C.1. Contractors: Lewis Bros. (Kings Cross) Ltd. London, N.W.1.

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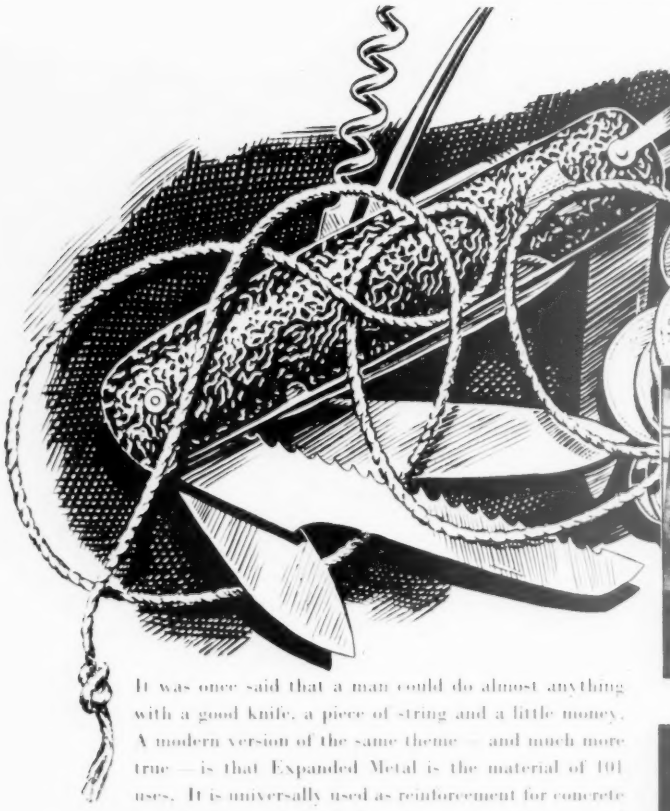

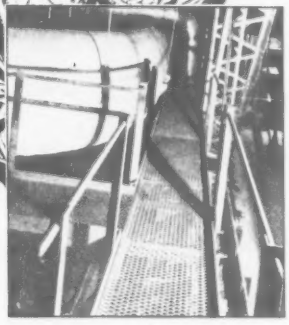

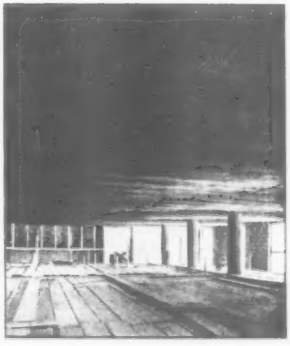

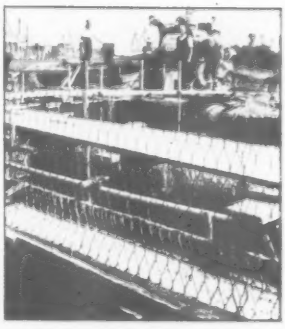

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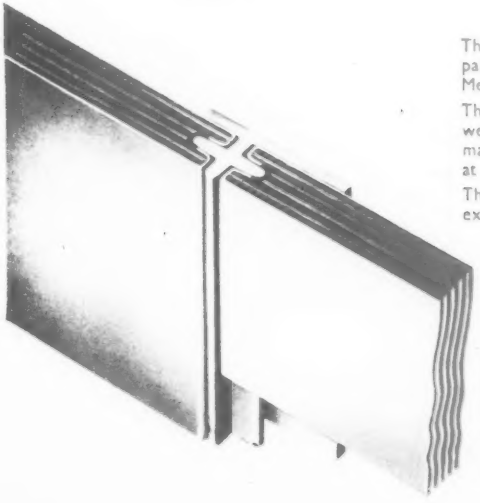
● *Photographs illustrate (Top) Expanded Metal walkways to the Royal Festival Hall. (Centre) "BB" Lathing ceiling at Bear Road Methodist Church, London. Architects: Messrs. Mauger & May, F.F.R.I.B.A. (Bottom) Reinforcement for concrete — Electricity Sub-station, Brentford, for the Southern Electricity Board.* (934)

'Secret' service in the Himalaya



The illustration shows some interesting Flexometal panelling on the Orient liner 'Himalaya'. Builders, Messrs. Vickers-Armstrongs Limited, Barrow-in-Furness.

The linings, balustrades and soffits of the main staircase were pre-fabricated to size and shape and finished in matt silver anodized aluminium, the panels being sealed at the edges.

The illustration on the left shows the secret fixing used extensively throughout this contract, under the supervision of McInnes, Gardner and Partners, Glasgow, Architects. Contractors, H. H. Martyn & Co., Ltd., Cheltenham.

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contractors: HARRY NEAL LTD.

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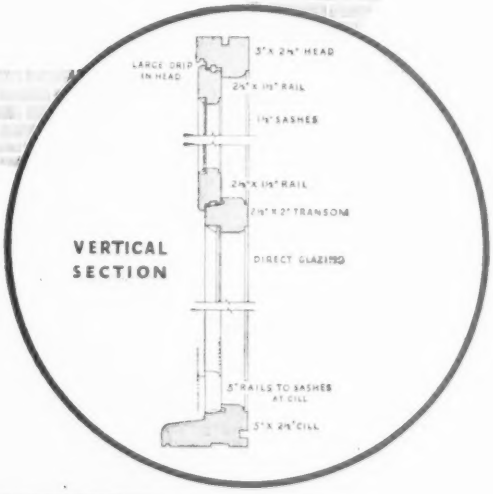

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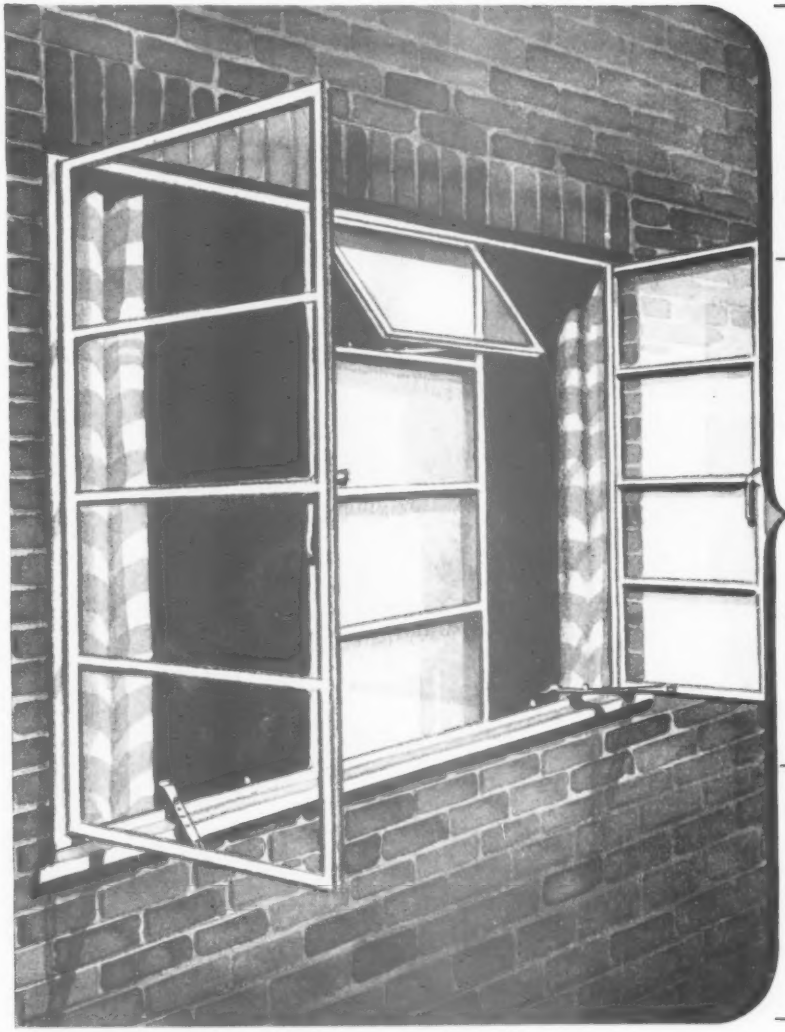

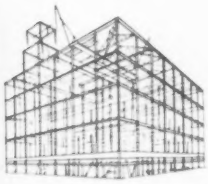

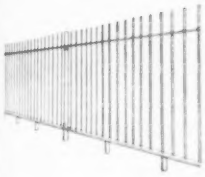

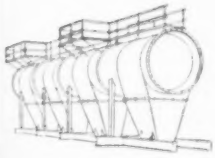

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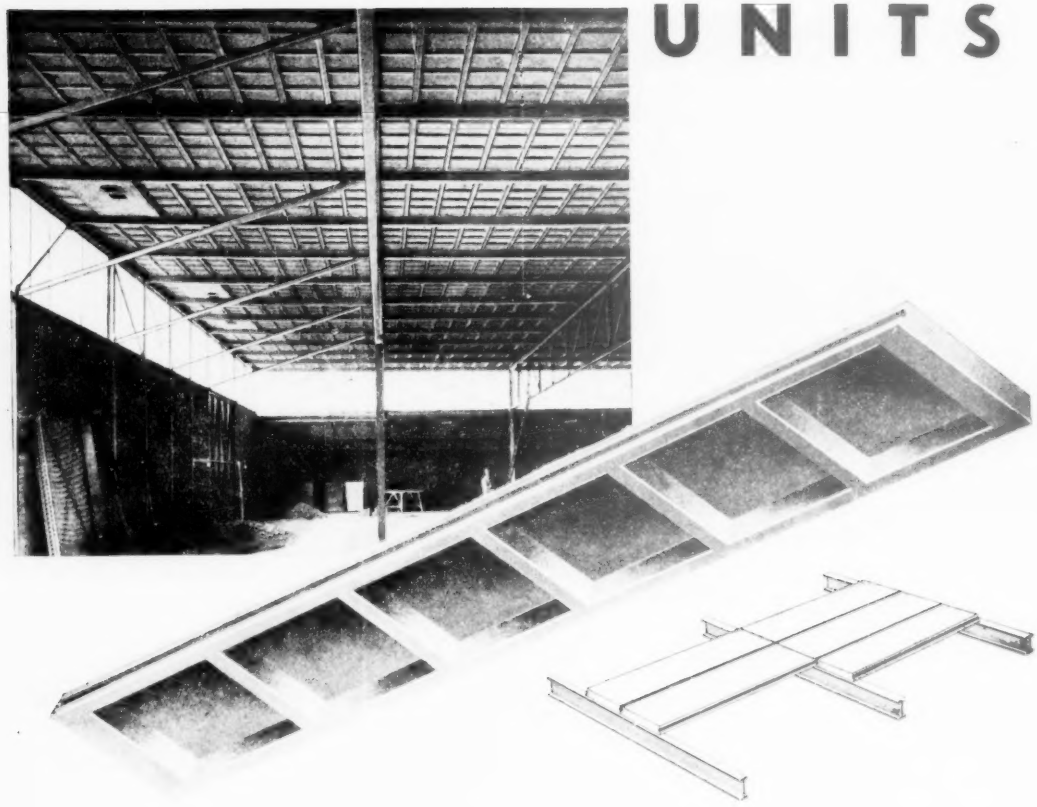

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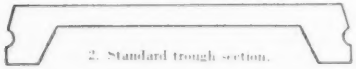

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AWARD

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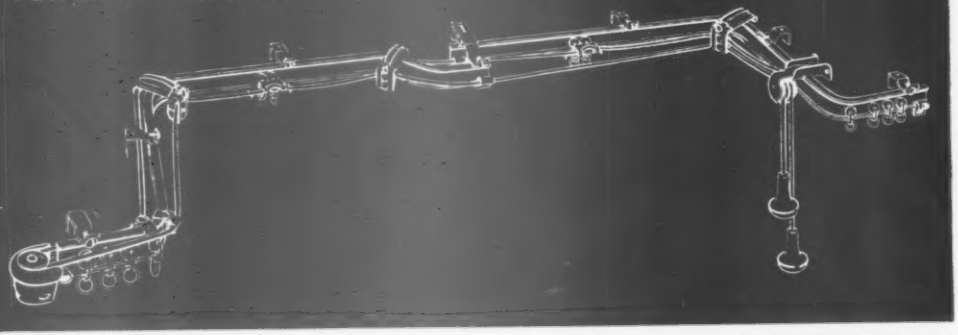

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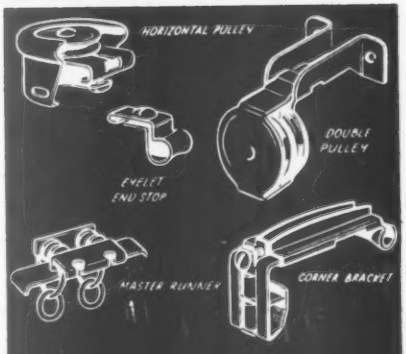
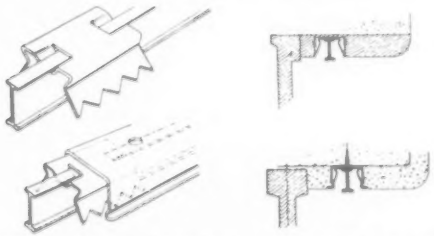


BAY WINDOW COMPONENTS

'RUFFLETTE' BRAND RECESSED (BUILT-IN) CURTAIN RUNWAY



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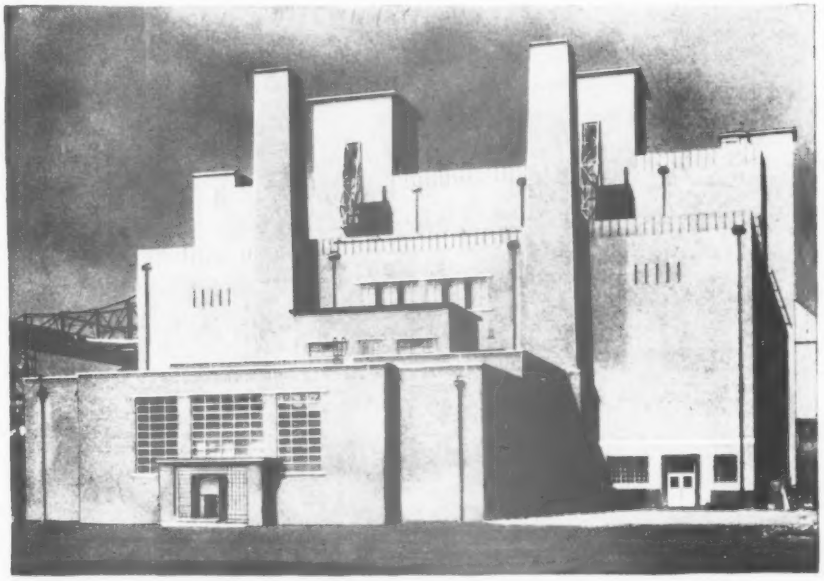

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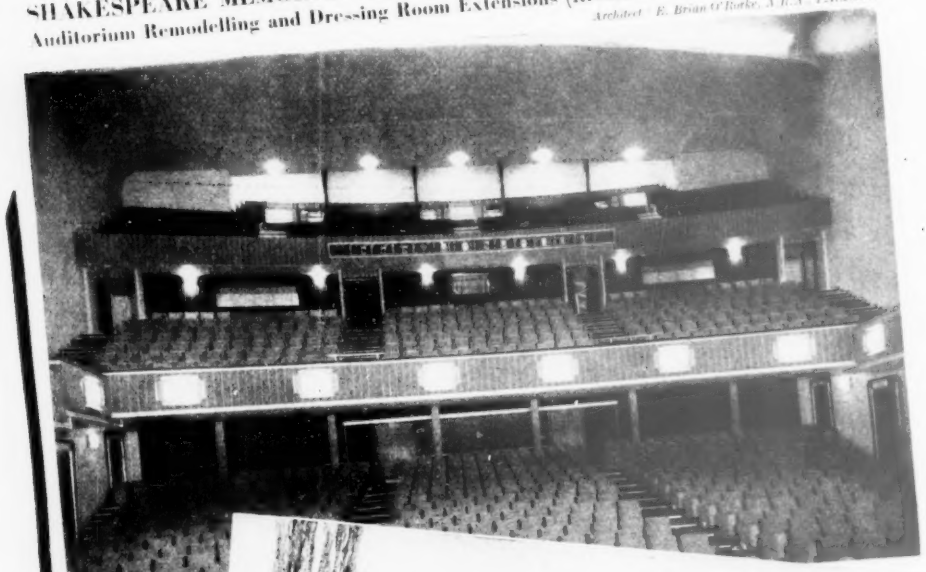

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Well planned well played!

The construction of the Courts of the Sports and Camping Centre referred to on page 107 of this Journal was carried out by us.

Architect K. Lindy Esq., F.R.I.B.A., of Messrs. Kenneth Lindy, Joseph Hill and Partners.

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Photograph shows work in progress on the Superstructure to the Uskmouth Generating Station near Newport, Mon., for the British Electricity Authority (South Wales Division).
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The Simon Langton Secondary School for Girls, Canterbury.

Architect: L. Hugh Wilson, A.R.I.B.A., A.M.T.P.I.

The firm of Bradfords were the appointed contractors for the reinforced concrete construction of this school, being responsible for the framework, the floors and the staircases.

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Vol. 201. No. 4336

THE ARCHITECT & BUILDING NEWS

January 24, 1952

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BACKWARD GLANCE

IN this issue will be found a review of the more important buildings completed during the past year. The cross section we have selected does not exhaustively include the many structures that contributed to the Festival of Britain, these have been reviewed before; this has to be said because 1951 *was* the Festival year and it was outstanding for that reason alone.

What else can be said about the *anno mirabilis?* It is certainly not one that can be starred for progress, unless it be conceded that a general election and a census are the signs. Unfortunately and certainly we must look elsewhere for the real indications that will give a true plotting of our present position.

The dollar gap has widened, and with an increase of world population and demands for raw materials and the return of Germany and Japan and other smaller national entities into world markets, cost of living in these islands—as also for all the older industrial nations—has gone up and inflation rears its ugly head. A tendency over the past year or two to take off controls internationally and nationally is speeding the process of depressing the pound; so much so that the present Government, in spite of themselves and of published policies, are forced to keep controls, impose others or to institute methods which are nothing more or less than hidden controls.

The creeping paralysis of shortages—let us bear in mind here only those of the building industry—is aided also by a world adherence to a rearmament programme controlled by the internal fears of the various participants and not by that organization to which they give money and lip-service, the United Nations Organization. Material development for peace is almost impossible alongside that for war; the latter will, in any event, cause rising prices and shortage of materials in spite of full employment (the last-mentioned state cannot be a virtue unless it is enlisted in the cause of construction and not to the ends of destruction). In turn, the building industry, like others, finds itself having to organize uneconomic economies and substitutions to cope with costs and shortages and those that plan our capital expenditure which is the mainstay of the building industry, find no way open for them but to reduce standards, in housing, schools, hospitals and in general maintenance work or, on the other hand, to slow down all new construction that is unconnected with export or rearmament.

So—this year we have seen zinc and copper placed under rigid control and steel brought back to permits; we have seen valiant attempts to reduce the cost-per-place of schools, by means of careful design, frustrated by rising costs and an overall instruction to cut education by 5 per cent. We note that the new towns construction is being slowed down and, in spite of the submission of development plans under the 1947 Act and of some progress in the reconstruction of the bombed central areas, a general decline in physical planning and in preparation for it, which may be long in recovery. Cost of building, naturally, in view of the general situation, has continued to rise; it is not eased by a corresponding increase in production or the speed thereof.

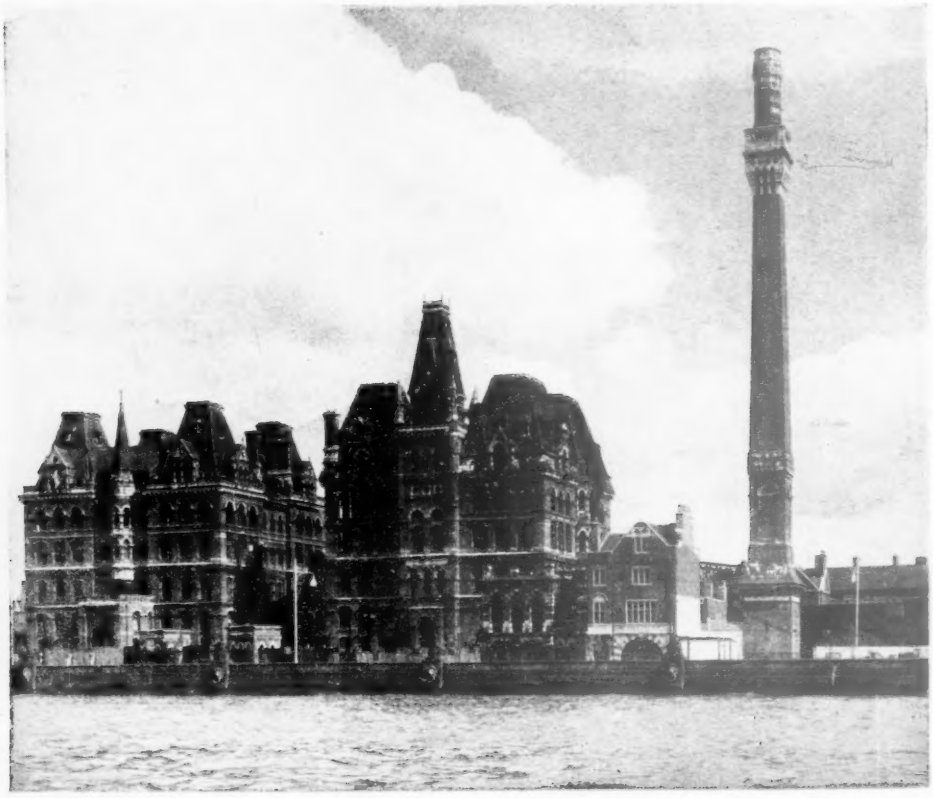
At no time in the world's history has pessimism completely controlled the human race—had that been so it would long since have succumbed to the empire of the ants or the bees. The centres of optimistic endeavour in Great Britain in 1951 were the Festival,

the completion of the Royal Festival Hall and two other great concert halls and the holding of the Building Science Congress. We make no excuses for lumping these events together or for including the last as one of the outstanding events of the year.

The Congress was a widely flung attempt to bring the Building Industry and, indeed, the Humanism of Architecture, into line with modern life and research. The top note of the event was undoubtedly the summing up by Sir Ben Lockspeiser, Secretary of the D.I.S.R. The Congress told a story of an industry with a malady and Sir Ben provided a startling diagnosis and some equally straight-from-the-shoulder remedies. Whatever effects his remarks and the work of the Congress may have on building research in this country, we have yet to learn that they have had much effect on the organization of the building industry or of its ancilliaries or in the methods of distribution which feed all parts of the industry. There was much there that has not yet been taken to heart by either the professional or the industrial sides.

Any other high spots? The R.I.B.A. has held some interesting exhibitions including that strange and soul-searching assortment assembled under the title "A Hundred Years of Architecture"—it was a revealing yet enjoyable review. There have been a few more architectural competitions in this past year; it is hoped that 1952 will see greater progress towards a return to the pre-war system of professional competition.

Doubtless many of our readers will have noted outstanding brightness or depressions of their own. Personal memories are more often reflections of the true meaning of the times in which we live than are the wider world records of great events. Let us now leave 1951, therefore, to the attention of the future and its historians, even if we do have to go back, from time to time, to its accomplishments or its defects for reference, encouragement or warning.



Another London landmark shortly to be demolished is the chimney tower of Doulton & Co.'s old premises on the Albert Embankment designed by Weir & Wilkinson and put up in 1876. The buildings in the photograph were vacated in 1940 when the firm moved to their present headquarters, Doulton House, near Lambeth Bridge.

EVENTS AND COMMENTS

THE BEST OF NINETEEN-FIFTY-ONE

When I was at school I used to spend some time on the first night of each term lying in bed reviewing the holidays. This examination of the highlights helped to take the edge off the more obvious unpleasantnesses of the beginning of a new term. I considered the pantomimes, circuses and parties I had been to and wondered whether I did not actually prefer Mildred with her stiff satin dress to the out of doorsy breeziness of Hilda. Nowadays I do the same sort of thing on New Year's Eve, if I remember the date, that is. This year, a little late I am doing it in print, and here are my more public, personal and semi-architectural memories of festival year.

I forecast that the South Bank Exhibition would be ready on time and it was, very nearly. I had several chances to see it as it neared completion and these added to my enjoyment of the finished exhibition. I promised myself that I would go there once a week while it was open and although I was not able to keep this up, I went a great many times. The most impressive ceremony of the year was undoubtedly the service of dedication at St. Paul's, where I was lucky enough to have an appointment which allowed me to move about both before and after the service and thus see all that was going on at close quarters. I could not actually attend the royal visit to the South Bank, but I was there later in the day in the dismal, drenching rain. That was almost my only sad moment in the Festival. I remember my first night visit to the Festival Gardens best. The fairy leafiness of the tree walk and the first showing of the guinness clock, the acrobats and high-wire performers looking so very much more impressive than when in a building or tent. The grotto, with its smells and weird noises. The solemn crowds among the gay colour and trees. Lansbury on a hot afternoon with no one about and a sense of guilt upon me that it was in some way my fault that there were not more people there. I remember, too, my last night visit to the South Bank when by chance I met Gerald Barry and later Casson in the middle of making a film. It was an appropriate farewell. When passing along the Embankment on the closing night all was dark, but suddenly all the lights were put on for a few seconds in a final flash before the end. For me there were only two disappointments at the South Bank, the food and the souvenirs.

The second most impressive ceremony of the year was the inaugural concert in the Royal Festival Hall. I had been at the foundation-stone laying and from Hungerford Bridge had watched the building grow; I was at one of the tuning-up concerts and had been conducted round the building by Robert Matthew and Peter Moro. This background made the opening ceremony the more exciting.

My experience of the Festival outside London was not very great, but I did visit the Canterbury Exhibition both before and after opening. It was very good indeed and by all accounts one of the best of the out of London shows. The Cotswold Exhibition at Cirencester also pleased me a great deal. My favourite other exhibitions of the year were the Scandinavian ones at Heals and later at the Tea Centre, the 1851 Exhibition at the V. & A.—I shall never forget the steam machine gun—the exhibition of photographs also at the V. & A., and the First Hundred Years of the Royal Academy still on at Burlington House.

Mr. David Woodbine Parish, the new President of the London Master Builders Association.

British Railways had a comparatively quiet year. They made a new booking office at Victoria Station which I did not like very much, they produced some monstrous posters, which have now, I am pleased to say, disappeared. They started on a campaign of relettering stations entirely with a sans serif type-face, and they introduced some rather banal pictures in compartments instead of the familiar beloved out-of-date photographs. Against this must be offset a most interesting tour of the R.I.B.A. transport exhibition which I made with Dr. Curtis, the chief architect to British Railways. It convinced me that in the long run we shall have some good railway architecture if the money is forthcoming, but it also showed me that many things in the field of design do not come under the architect in British Railways and here the outlook is not so bright.

During the year I made my first pilgrimage to a new town and to a Hertfordshire School. Both Harlow and the school cheered me up no end. I liked Gibberd's point house better than any I had seen in Sweden.

I was not very pleased that in Festival year the Royal Gold Medal should have gone to a traditionalist, but the award of the London Architecture Bronze Medal for the Pimlico scheme, and the subsequent knighting of the Director of Architecture of the F.O.B. restored the Festival spirit. For me the most important architectural appointments of the year were those of Hugh Casson as an R.D.I., and to a readership at the R.C.A., and of Michael Pattrick as principal of the A.A. School. The two most

METALLURGICAL PALACE, LIEGE
ARCHITECT: GEORGES DEDOYARD

In this building, aluminium has been used both structurally and decoratively. The flat infilling panels have a surrounding band in colour. No bolts for fixing are visible, special aluminium connections being used to fix panels to frame.

important competition winners were Basil Spence with Coventry Cathedral—and what a crowd went to see the drawings when they were shown in London—and Enrico de Pierro with the Poole College of Further Education. I understand that the modifications which Spence is making to his design are the results of his own second thoughts and not the suggestions of outside authorities or individuals.

Best functions at the A.A. were the practice arbitration at which Mr. Yeomans, the contractor, showed up as a born actor, and where the eloquence of learned counsel was matched by the beauty of their attendant wives; The debate on the state of the A.A., where the voting went against the oratory: the reception, which is always good: the students' carnival, which is good, too, but is also too crowded and the performance of the Alchemist by the Dramatic Society. I have to admit that I did not attend many functions at the R.I.B.A., but I enjoyed the reception except for the lack of a bar, and, hurrah for progress, this is being put right this year.

Another progressive step, urged from this column, is that the R.I.B.A. is showing the Poole Competition Drawings. Let us hope that in future all the first London showings of architectural competition drawings will be at 66, Portland Place. The A.B.S. ball, at the Dorchester, was a success once more but the procedure needs pruning if it is to continue to be one. Casson's R.I.B.A. Christmas lectures for boys and girls on the South Bank Exhibition were better attended than any since the war and would have delighted grown ups as well. During the year I have in one way or another joined in a number of national dog fights on questions of architectural interest. The Carlton House Terrace controversy has died down and I cannot remember how the matter stands at the moment. This usually means that the cause is lost. In this instance the skyline of our only triumphal way is to be ruined and some of our most dignified buildings with it. The Colonial Office, attacked too late, retreated a few feet from the Abbey, but is on the way up, unaltered. The Oxford Gas Works row has flared up again after the Southern Gas Board had made an announcement which rendered the agreement to build elsewhere null and void. London appears to want Temple Bar back but opinion is still divided on a suitable site. The incorporation of the gate in a memorial to the Battle of Britain was not, I thought, a good one. Now the inhabitants of Cheshunt, present home of Temple Bar, are claiming it as their own and there are loud cries of hands off our ancient monument. Marlow Bridge over the Thames is still in danger and a new bridge is being called for by the county council. The old bridge should be scheduled as an ancient monument but is anything being done about it? The National Trust lost its case against the Electricity Authority who are laying a power line by helicopter across the Malvern Hills. Will this affect Snowdonia and its would-be protectors? The St. Albans Gasworks is expanding in spite of the uproar.

What does the future hold? Surely someone will do something soon about London's traffic, and the improvement of Hyde Park Corner already suggested. As far as I can see the only bright spot on the horizon is the possibility of a joint inquiry into public lavatories by the Building Centre and the C.O.I.D. which was suggested in a recent article in the *Spectator*.

MR. DAVID WOODBINE PARISH

I mentioned some weeks ago that Mr. David Woodbine Parish was to be the new L.M.B.A. president. He is in his earliest forties and is the youngest president the Association has ever had. He is the third member of his firm to occupy the office. Educated at Eton, with Mather &

Platts, at the Manchester College of Technology and the Northern Polytechnic, he was apprenticed to Holliday and Greenwood rising to the board in 1937. Mr. Woodbine Parish is best known for his energetic campaigning for the increased use of incentives and for the improvement of education throughout the building industry. He serves on a number of important committees outside the L.M.B.A.

THE EVENING STANDARD

Readers will know that the *Evening Standard* is no friend of mine but fair's fair—they have recently published two leading articles of building interest, the first condemning the architecture of some of the Lessor scheme buildings—a little late this, I fear—and the second loudly in praise of the Building Centre. I touch my cap to the *Evening Standard*. Talking of cap touching a reader has reproached me, a military personage, for raising my hat in print. He requires me to leave that to civilians like A. . . l. He says that I should be familiar with the service practice of removing headdresses. If I remember my ceremonial aright this is only done in church, a court of law, or when about to give three or more cheers. The normal greeting is the salutation.

ABNER

NEWS OF THE WEEK

The Building Centre Opened

On Monday, the new premises of the Building Centre at Store Street, Tottenham Court Road, were formally opened by the Minister of Works, the Rt. Hon. David Eccles, M.P., who said that what gave him the greatest pleasure was not the exhibits, fine as they were, nor the skilful layout, but the fact that the Government had nothing to do with it. He said, "It is a shining example of co-operation and private enterprise." He went on to say, "Let me make a special point of saving steel. The reinforced and prestressed concrete in the roof and on the stairs of this building are a fine example to the designers of buildings. I was told last week that it was now possible to erect ten-storey flats without a steel frame. Every day someone draws my attention to a new material or a new method of saving labour or money. I am sure our knowledge is far ahead of our practice and that this Centre has here a most important part to play.

"Ladies and gentlemen, the efficiency and high standards of British building are not far-distant ideals to be pursued in leisurely and spasmodic fashion. They are urgent and peremptory commands. To serve that high cause about which the Prime Minister spoke to the Congress of the United States we have to carry out a great programme of building for the Armed Services — storage depots, camps, airfields, gun-sites and radar stations.

"We are going to make ourselves strong as a plain duty towards all free men, but at the same time we intend to expand our factories, rebuild our blitzed cities, and up and down the country provide houses for our people. Here is a programme of work for years ahead. In all this the Building Centre has a unique opportunity. It can become a seed-bed of ideas which will improve and embellish life in these islands and foster trade with the countries who produce the food and materials we need. Here is what Englishmen most like to see—private enterprise in the service of the public good."

Testing Timber Structures New Laboratory at the F.P.R.L.

A new laboratory has been brought into use at the Forest Products Research Laboratory, D.S.I.R., Princes Risborough, for testing timber structures such as floors, roof trusses and girders. The basic knowledge so obtained should be of particular value at the present time, when alternatives to steel are being sought.

The laboratory is equipped to permit the testing of structures occupying an area up to 38 feet by 26 feet, under a maximum load equivalent to a distributed load of 3cwt per square foot. Tests can be made of trusses, girders, etc., up to 70 feet long, and of arches up to 38 feet span and 26 feet high, under loads up to maximum 1½ tons per foot of span.

For the present all the resources of the new laboratory will be needed for gaining basic knowledge of the behaviour of timber structures. This knowledge will be made available to architects and industry through the normal channels as soon as possible. Eventually it is hoped that the laboratory will be available for tests on behalf of individual firms, but this is not possible yet; a roof truss designed by the Timber Development Association is now under test.

The Bedford Travelling Scholarship (£100) awarded by the West Yorkshire Society of Architects has been won by Mr. John M. Stables, an assistant architect in Bradford City Architect's Department.

The H. W. Williams' Prize of £50, awarded by the Liverpool Architectural Society, has been won by Mr. R. A. Shaw, a student at the School of Architecture, Liverpool University. The subject was a church in reinforced concrete on a housing estate in the city. There were nine entries.

Mr. F. G. Goodin, F.R.I.B.A., Head of the Building Department in the Hammersmith School of Building and Arts and Crafts, is relinquishing his post to take up his new appointment on March 1 of Head of the Building and Quantity Surveying Department at the College of Estate management.

COMING EVENTS

The Royal Institution of Chartered Surveyors

January 29, Annual Conference of Agricultural Members. Morning Session, 11 a.m.: Address by Mr. B. S. Furneaux, M.Sc., F.G.S., on "Soil Surveys in Relation to Farm Valuations"; followed by a discussion. Afternoon Session, 2 p.m. approximately: A panel of members will answer questions on points arising in agriculture practice.

Housing Centre

January 29, at 1 p.m. Special Exhibition and Meeting on "Houses 1952—Second Supplement to the Housing Manual." Speaker: A. G. Sheppard Fidler, F.R.I.B.A., A.M.T.P.I.

The Architectural Association

January 30, at 8 p.m. Ordinary General Meeting. Talk by Mr. Hope Bagenal, D.C.M., F.R.I.B.A., on "Exposure, Durability and Maintenance in Modern Design," at 34-36, Bedford Square, W.C.1.

Student Planning Group

January 31, at 6.30 p.m. Talk by Mr. L. A. Goss, Information Officer of The Docks and Inland Waterways Executive, on "Inland Waterways—The Practical Outlook"; at 28, King Street, W.C.2.

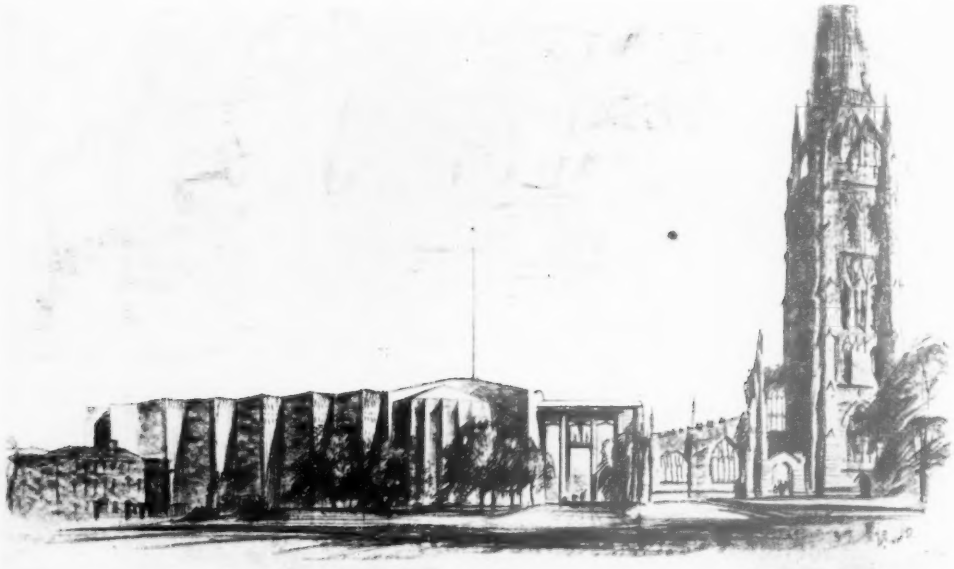
Royal Society of Arts

January 30, at 2.30 p.m. Talk by the Hon. George C. H. Chubb, managing director, Messrs. Chubb & Son's Lock & Safe Co., Ltd., on "Security Offered by Locks and Safes," at John Adam Street, Adelphi, W.C.2.

EXHIBITION

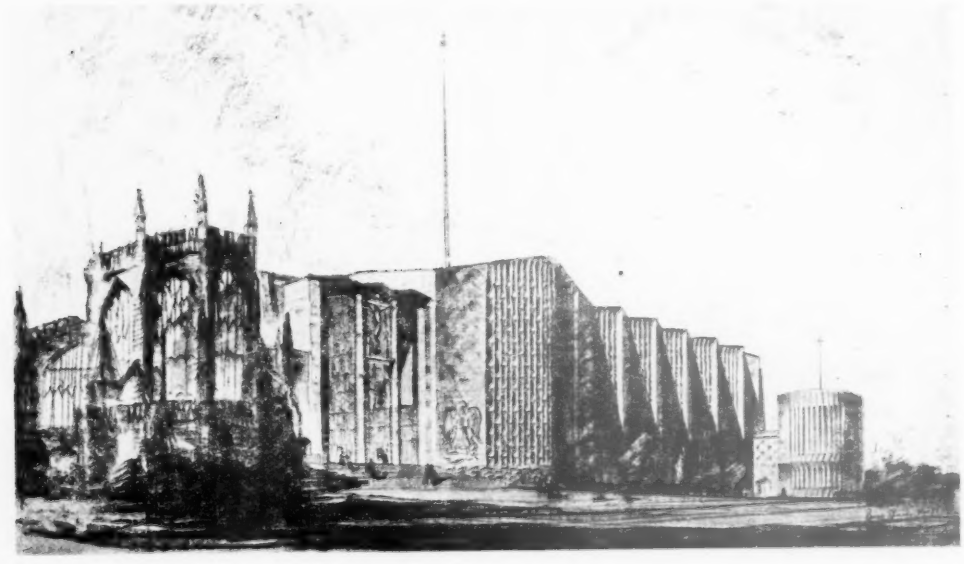
The Architectural Association

January 30 to February 22. Exhibition of Photographs by Members.



COVENTRY CATHEDRAL MODIFICATIONS

These drawings show one of the alternatives in the general development of the design for Coventry Cathedral. This scheme has been seen by the Fine Arts Commission but has not yet been approved by the Reconstruction Committee. The difference between these and the original designs is that the porch goes up to the full height of the internal concrete vault, making a stronger link between the new and the old and the development of a paved area on the Priory Street side, and a flèche has been added surmounted by a star and cross. The five glass screens dividing the Porch from the Nave which were to have been capable of being lowered into the floor, are now to be replaced by a fixed glass wall, decorated with transparent figures of Saints. Mr. Graham Sutherland is submitting designs for the great tapestry behind the altar.



Festival Year in a nutshell

The four short pieces on this page introduce the section of illustrations of Festival Year Architecture.

Housing

HERBERT TAYLER

Even before the Festival orgy was over came the hangover and the cuts. State Housing throughout its brief career has, I feel, suffered from too many cuts so that it now lies bleeding.

There is of course always a need for new ideas and well-timed changes, but nothing growing or living like a plant, like architecture, can stand being constantly moved and fussed over. It must be allowed some time to establish and develop itself.

We have by now had hundreds and hundreds of type plans, some pretty bad and some of the good ones, dare I say it, borrowed cold from the free but struggling non-government office. But mostly the housing one visits or passes is mediocre to put it mildly. It shows a lack of care, of love if you like, like a plant in a constant wind.

To have certain standards in house design is right but they are far too inflexible at one moment, and at the next—gone with the wind and the second W.C. When some of us were suggesting slightly less space and less plumbing, it was no ! So one office I know prepared 161 standard drawings of several house types. These were the basis of a small post-war programme and on top of it were 274 drawings for the separate sites, surveys and so on, in all 435 drawings. The 161 type drawings, incapable of any further modifications or erasions, must now be scrapped. This all over the country every 3 or 4 years is not clever. Nor, let us face it, are stairs diving out of living rooms and teeny dining spaces where the hall used to be. Unrealistic these are, in an unheated, un-Heal-furnished house, however pretty the front elevations are.

The Three New Concert Halls

TREVOR DANNATT

" At last "—so Sir John was reported—" we have a concert hall that looks like a concert hall . . . not a dissecting theatre " Musicians on Architecture have been a feature of the past eight months and there has been an amusing display. Alas, understanding of one art does not necessarily imply wide perception and executive musicians least of all seem interested in the visual arts. Three new halls opened since last Spring has been something to talk about and there has been a free for all where resonance, reverberation, richness, brilliance, warmth, colour, clarity, tone, depth, shade and many other such words have been hard at work, carrying the burden of each speaker's or writer's private definition. Despite the looseness of expression and range of opinions, acoustically there seems cause for satisfaction. The, one suspects, partially empirical science of acoustics has to some extent determined the form of these halls and to a larger extent the areas, position and nature of the various finishes. How different are the resulting architectural expressions.

Referring to the interiors, for two of the halls are only that, while there may be acoustic rivalry between the three the architectural status of the Festival Hall remains unique. For it speaks a different language, one which is alive and developing and the vocabulary and syntax of which it itself extends. It speaks consistently and with authority though sometimes too loudly when trying a new word. This language is still scarcely understood, even by the quite educated, but at Bristol though there are words and phrases from the new tongue the idiom is almost a common one. Also at Manchester, only more so. There is spoken what was once thought new but which now turns out to be a dead language pronounced in a new way. Withal it is quite pleasant yet one misses the old forthright character in the interior which, however, still impresses us outside.

Schools

G.M.

In 1951 the building of some 400 or 500 new schools was started in this country ; the cost limits set by the Ministry of Education came down from £170 and £290 to £140 and £240 per primary and secondary place respectively ; building costs rose by about 15 per cent ; site labour everywhere was scarce.

New building regulations were made in October, specifying lower total teaching areas but allowing much greater flexibility in the way the total area was made up ; Ministry Building Bulletins offered suggestions and advice on primary schools (Nos. 1 and 6), secondary schools (Nos. 2 and 2A), college of further education (No. 5) and cost study (No. 4).

Each of these happenings exerted its peculiar pressure on the sort of schools which were planned. Buildings were smaller, the area per pupil dropping from about 60 to 50 sq. ft. in primary and from about 90 to 80 sq. ft. in secondary schools ; ceiling heights tended to be lower (compare the primary school at Aboyne Park (fig. 1) with that at Eastcote (fig. 2) on page 98); some argued the advantages of these reductions—compactness, flexibility and informality ; others saw them only as desperate expedients to hit the cost targets.

Four out of every 5 schools were planned in brick and standard steel sections ; average size secondary schools in this type of construction would take about 3 years to complete ; more architects and authorities turned to prefabrication to escape the shortage of site labour ; about every fifth building contained a substantial volume of prefabricated components.

In 1952 the course will be set by rising costs, shortage of steel and even scarcer supplies of traditional building labour. It remains to be seen what is proposed in the further announcement on capital investment promised by the Minister in her now famous " 5 per cent off without damage to the fabric " circular of 7th December.

South Bank Exhibition

N.M.

There is little left to say about the high-spot of 1951. An unpromising site was changed by a brilliant team into a delightful precinct where pedestrians could stroll or eat and drink without being harassed by wheeled traffic.

The illuminations at night gave us magic without vulgarity, a veritable eye-opener to those who believed that Piccadilly was the ultimate achievement of the lighting engineer.

The exhibition was expensive ; in construction it assumed a semi-permanent form rather than temporary ; the exhibits inside a few of the pavilions were such a melange of science and art that interest soon gave way to fatigue, and the sculpture and paintings were not of the very highest order. Honours went to the architects, landscape architects, electricians and to those who organized the traffic. What are the conclusions we should draw from the South Bank? I think they are that the success of the exhibition proves that more of the Thames bank should be used for the recreation and entertainment of Londoners. The Riverside through London has become an Ugly Sister. The South Bank Cinderella had perforce to disappear at midnight, but the designers and creators of the exhibition are still with us, and with many others are quite capable of carrying the gaiety and good design into permanent works. Let the L.C.C. wave the magic wand again.

1

The Bedding Centre, Knightsbridge
ERIC BROWN & PETER CHAMBERLIN

2

Air Terminal for K. L. M., Sloane St.
J. STROUD FOSTER

3

Qantas Empire Airways office and its neighbour, the South African Tourist Association's office, in Piccadilly
JAMES CUBITT & PARTNERS

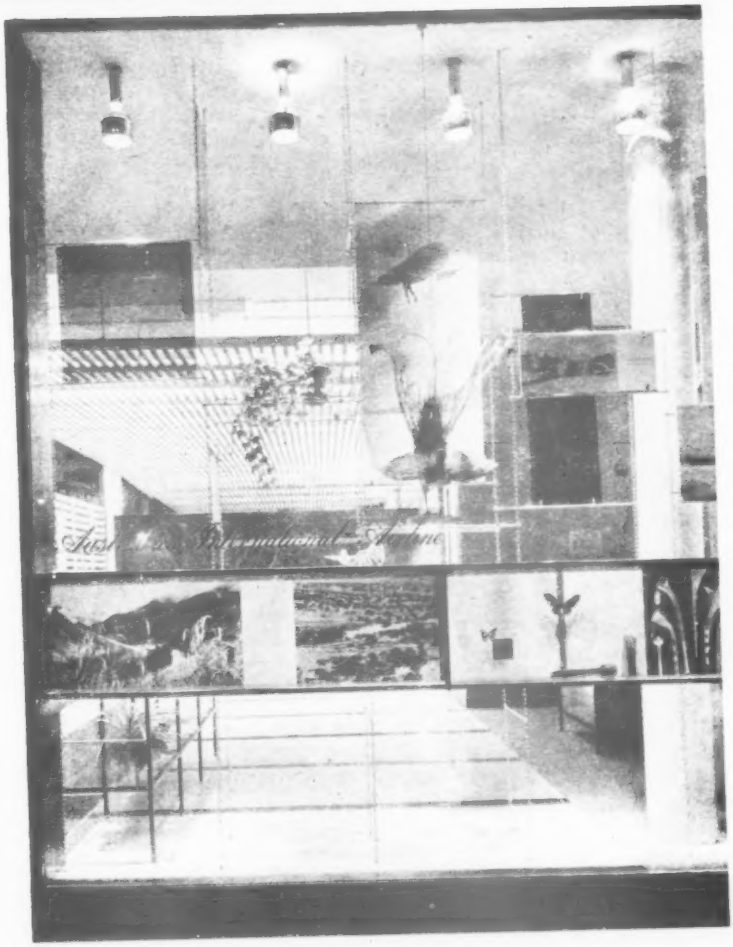
4

Dover Street elevation, Qantas Empire Airways office

5

Motor Showroom in Kensington
MICHAEL EGAN

2 3

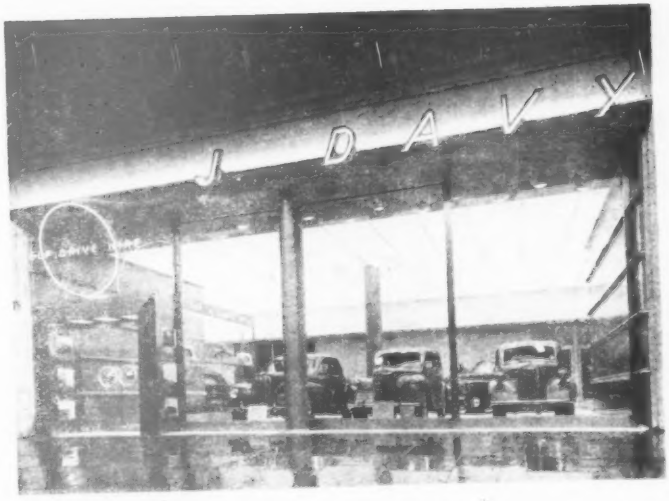


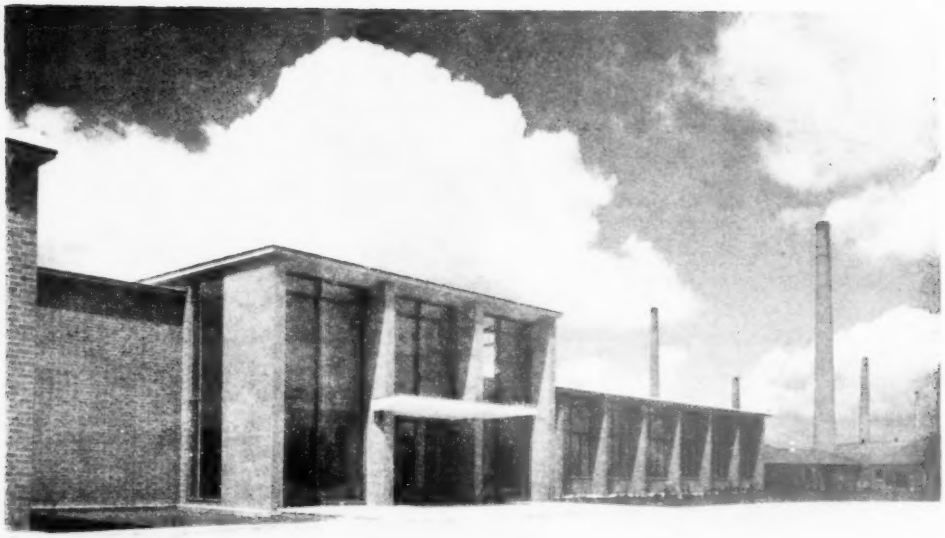
Showrooms

4

5

1931 Review





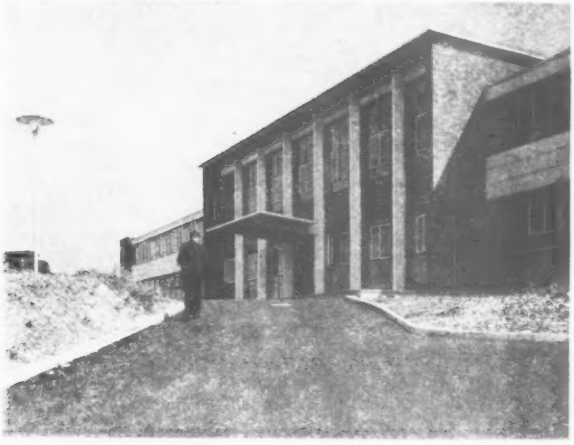
1

Buildings for Industry

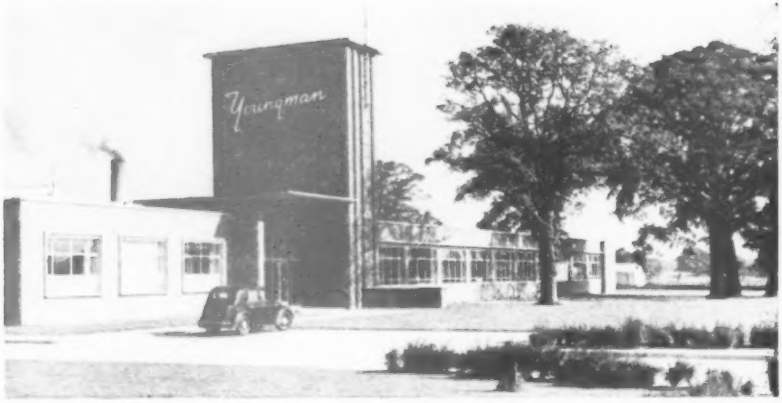
1
Research Laboratory, Stewarthy
for the London Brick Co.
CECIL C. HANDISYDE

2
Diamond Factory, Basingstoke
for Messrs. L. M. Van Moppes
MOIRET & WOOD

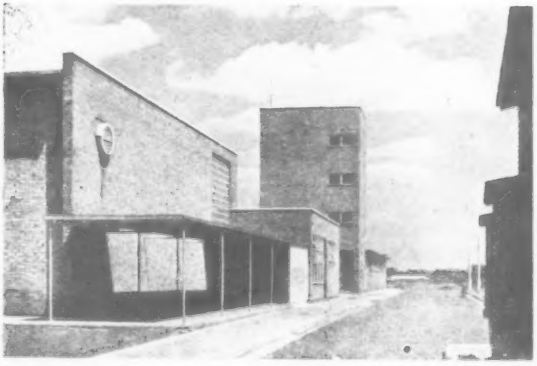
3
Factories, Crawley New Town
A. G. SHEPPARD FIDLER
Chief Architect, Crawley
Development Corporation



3



5 1



1
Factory, Crawley New Town
A. E. BARNARD

5
Canteen and Lobby at Bromley-by-Bow for the North Thames Gas Board
ELIE MAYORCAS

6
L.T.E. Dock Unit, Camberwell
C. HOWARD CRANE

1951 Review

6

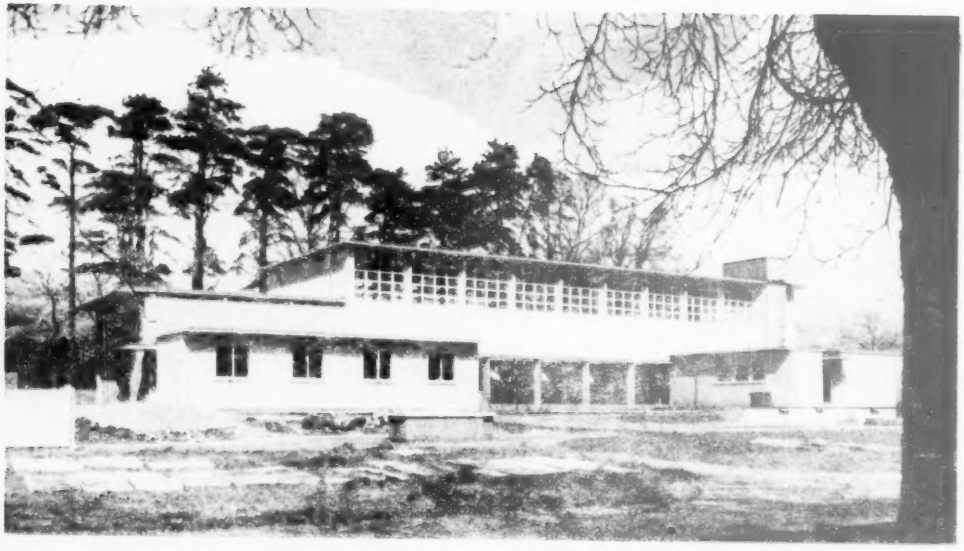
Scientific and Cultural Buildings

1

Shakespeare Memorial Theatre, Stratford

Showing new dressing rooms and Green-room with private terrace for the actors

BRIAN O'ROURKE



2

Structures Laboratory, Slough, Bucks

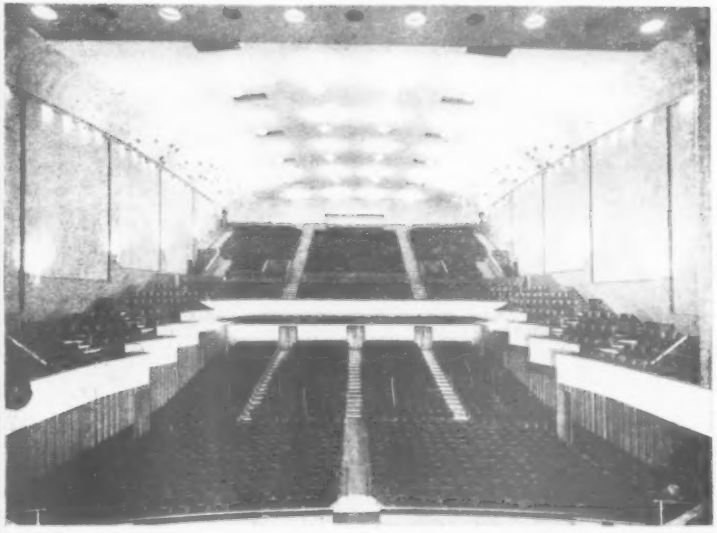
CHRISTOPHER NICHOLSON

HUGH CASSON & NEVILLE CONDER

3

The reconstructed
Free Trade Hall
Manchester

LEONARD HOWITT
City Architect



1

The reconstructed
Colston Hall, Bristol

J. NELSON MEREDITH
City Architect

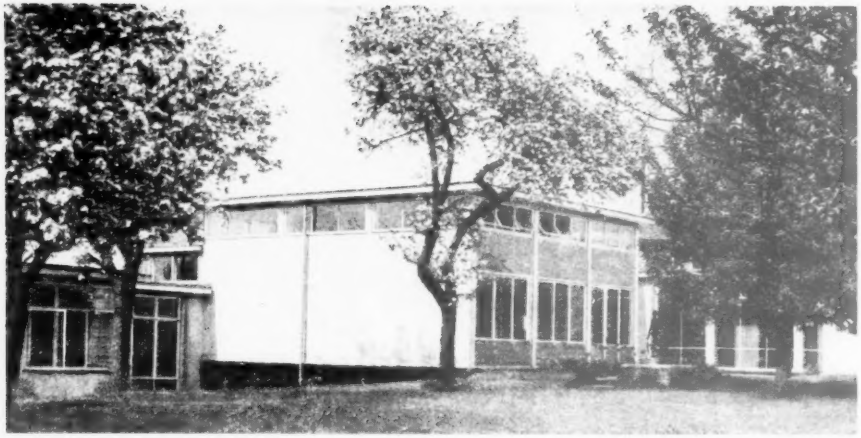
1951 Review

5

The Royal Festival Hall

ROBERT H. MATTHEWS
L.C.C. Architect

J. L. MARTIN,
Deputy Architect



1

2

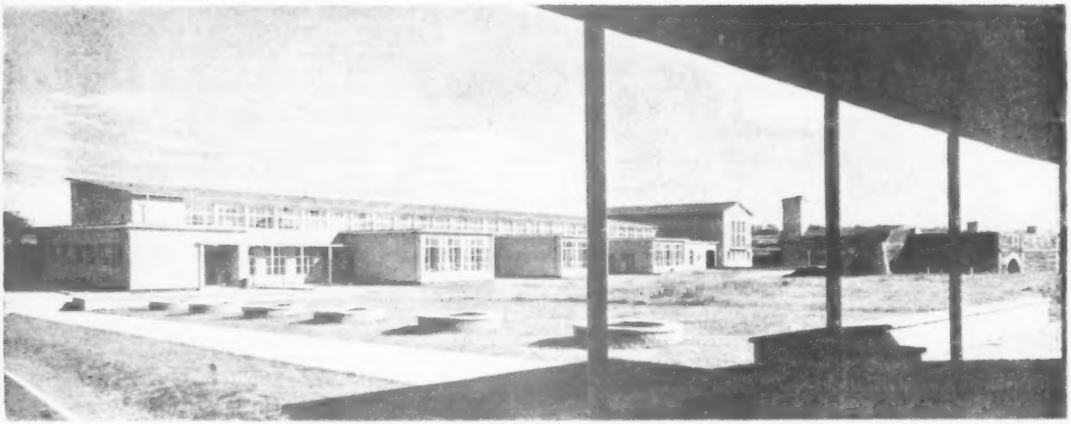
Schools

1 *Abovne Lodge Primary School, St. Albans*
C. H. ASLIN, Herts County Architect

2 *Eastcote Primary School*
C. G. STILLMAN, Middlesex County Architect

3 *Astor Avenue County Primary School, Dover, Kent*
HENRY BRADDOCK & D. F. MARTIN-SMITH
in collaboration with S. H. LOWETH, County Architect

3



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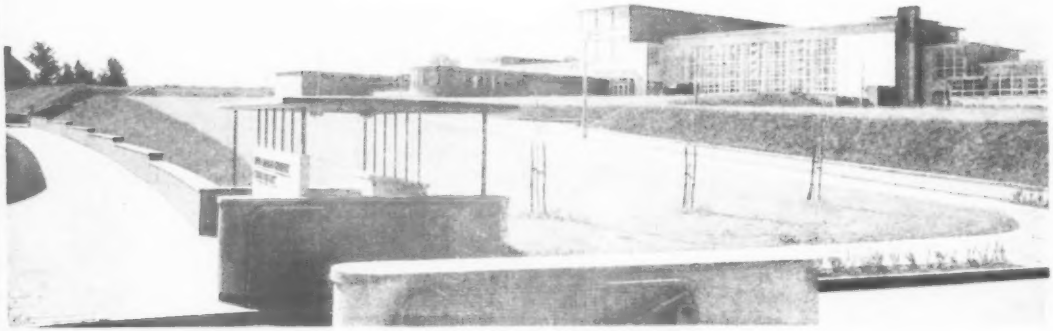


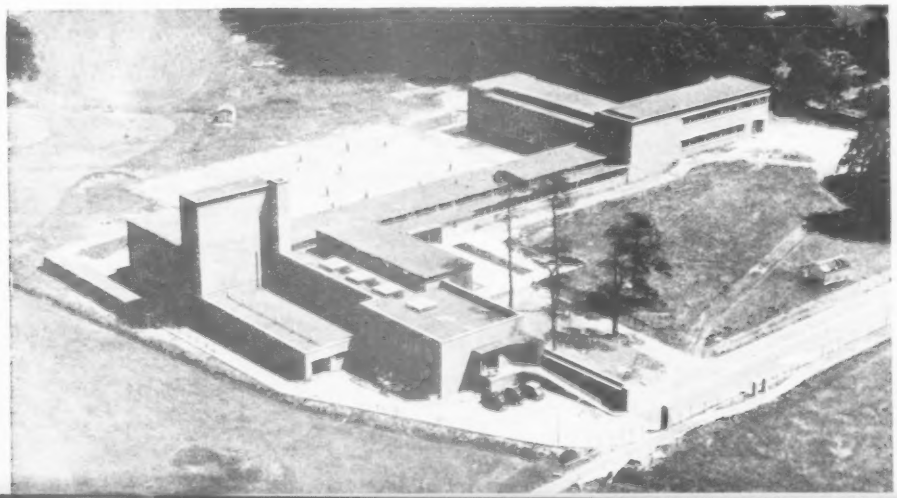
5

4 *Knowle Primary School for the City of Plymouth Corporation*
LOUIS DE SOISSONS & PARTNERS

5 *Simon Langton Grammar School for Girls, Canterbury*
L. HUGH WILSON, City Architect

1951 Review

6 *Chislehurst & Sidcup County Secondary School, Kent*
E. B. MUSMAN
in collaboration with S. H. LOWETH, County Architect



6

Flats and Maisonettes

1

1
Swail House, Epsom
Flats for the London Association for the Blind
J. R. F. COOPER

2
Church Street Estate, Marylebone
Flats, Maisonettes with Shops under
EASTON & ROBERTSON

2 3

3
Carlton Road flats, Acton
CLIFFORD CULPIN & PARTNERS

4
The Lawn, Harlow New Town
Flats, in one ten-storey and one three-storey block
FREDERICK GIBBERD

5
Killick Street flats, Finsbury
JOSEPH EMBERTON

6
Pimlico flats, Westminster
Ground & 1st floor—1-room flats
2nd & 3rd floors—3-bedroom maisonettes
POWELL & MOYA

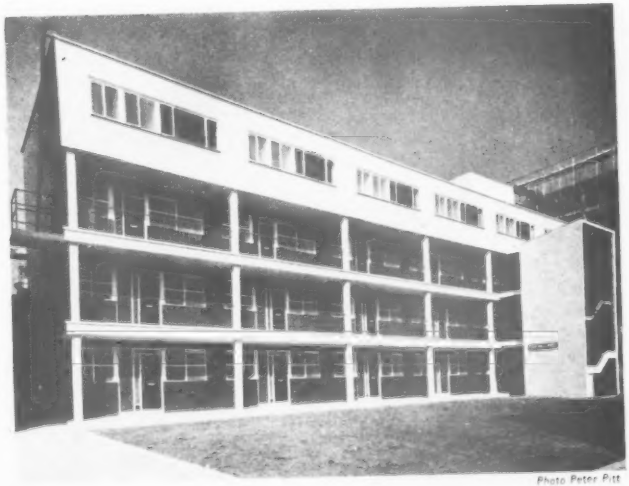


Photo Peter Pitt

Housing

1

Aged persons cottages, Queen's Drive, for the Corporation of Glasgow
DIRECTOR OF HOUSING

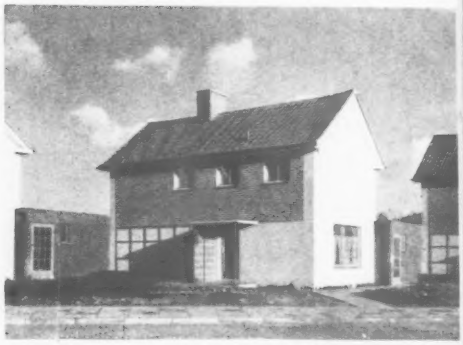
2

Houses for Esher Urban District Council Housing Medal Award 1951
G. BLAIR IMRIE

3

Houses for the Council of the Scilly Isles Housing Medal Award 1951
A. G. BAZELEY

4



1

One of 11 Police Houses at Amersham for the Bucks Standing Joint Committee
F. A. C. MAUNDER
Bucks County Architect

5

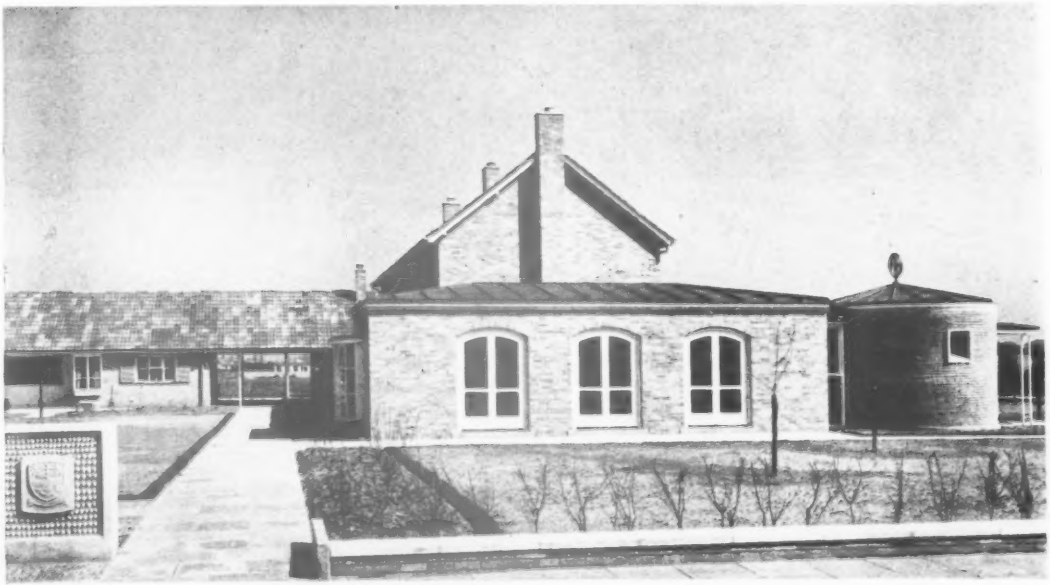
5

House at East Molesey, Surrey
LYONS & TOWNSEND

6
Fishermen's cottages
for Dunbar Town Council
BASIL SPENCE & PARTNERS

7
Lytham St. Annes War
Memorial Housing Scheme
Housing Medal Award 1951
View with Clubroom & Memorial
Chapel in the foreground
T. MELLOR

6



Stores and Offices

1

2

3

1
Dingle's new store, Plymouth
SIR JOHN BURNET, TAIT & PARTNERS

2
Marks & Spencer, Exeter
LEWIS & HICKEY

3
Mayes Store, Southampton
GUTTERIDGE & GUTTERIDGE (exterior) TRIPE & WAKEHAM

4
Dolcis Store, Plymouth
ELLIS E. SOMAKE

4

1951 Review

5

5
Atlantic House, Holborn, E.C.1
T. P. BENNETT & SON

6
St. Swithin's House, E.C.4
GUNTON & GUNTON

7
St. Bridget's House, Bridewell Place, E.C.4
TREHEARNE & NORMAN, PRESTON & PARTNERS

8
New Offices for Boulton & Paul, Norwich
T. OWEN BOND & SON

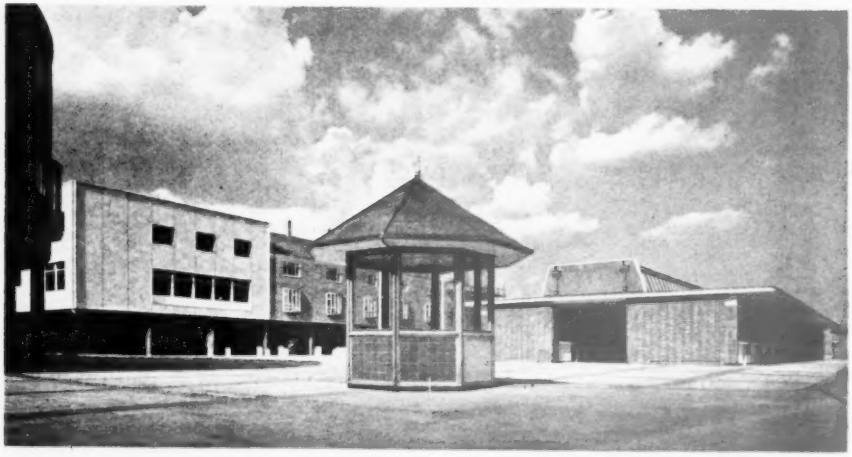
6

7

8

Lansbury

1



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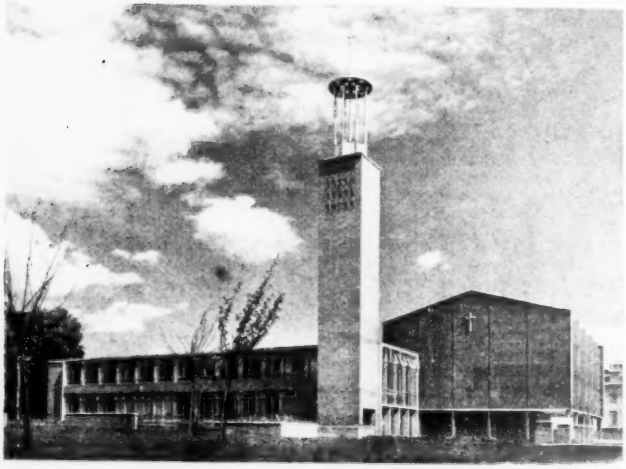


Photo: John McCann

3

1
Primary School, Ricardo Street
YORKE, ROSENBERG & MARDALL

2
Crisp Street Market, Poplar
FREDERICK GIBBERD

3
Trinity Church and Halls, Poplar
CECIL C. HANDISYDE & D. ROGERS STARK

Authorities' Buildings

4

5

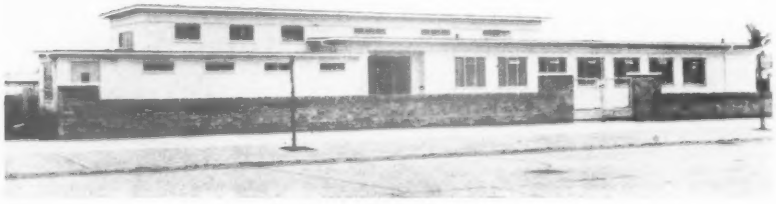
1951 Review

4
Sports and Camping Centre, Chigwell for the London Parochial Charities
KENNETH LINDY

6
Health Clinic, Chigwell, for Essex County Council
H. CONOLLY, County Architect

5
Heath Park Estate for Dagenham Borough Council
NORMAN & DAWBARN

6



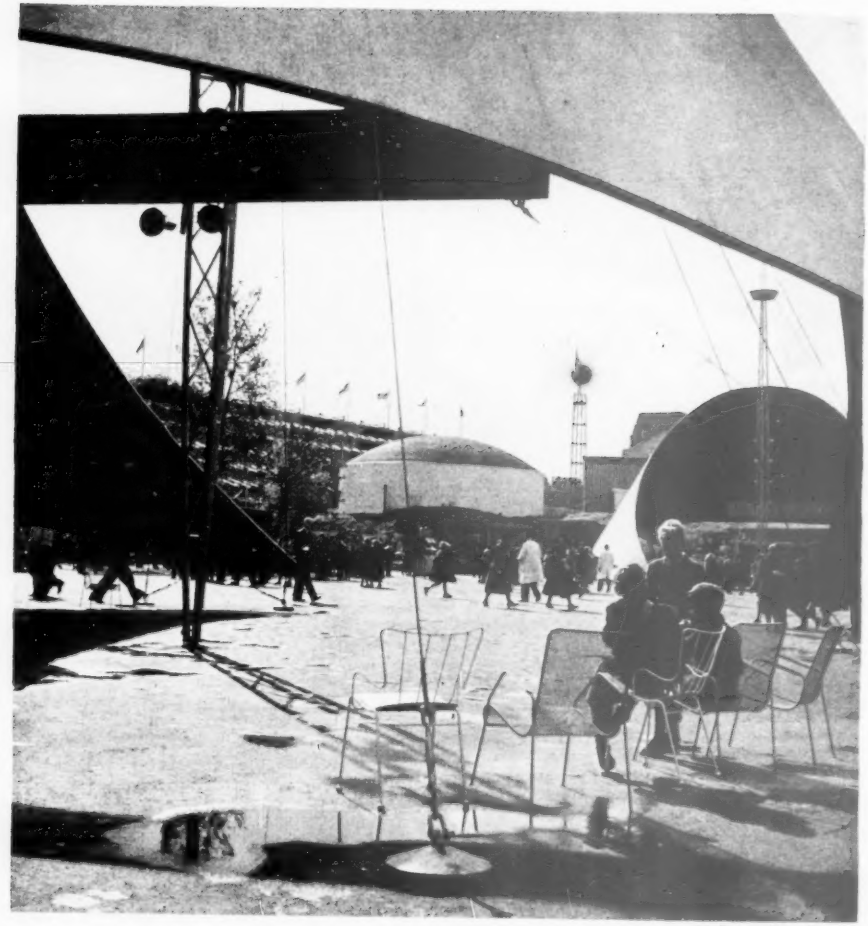
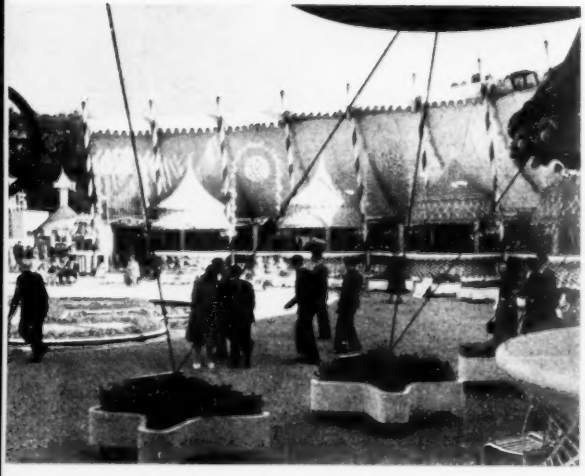


Photo — Colin Westwood

1

2

3



Festival of Britain Exhibitions

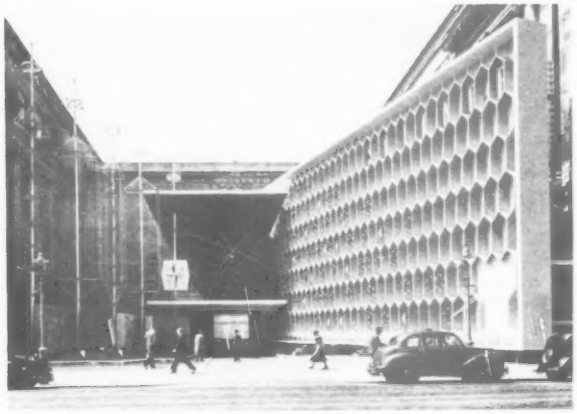
1
South Bank Exhibition
HUGH CASSON, Director of architecture

2
Festival Gardens, Battersea Park
HARRISON & SEEL, Co-ordinating architects

3
The Canterbury Festival Exhibition
L. H. WILSON, City Architect

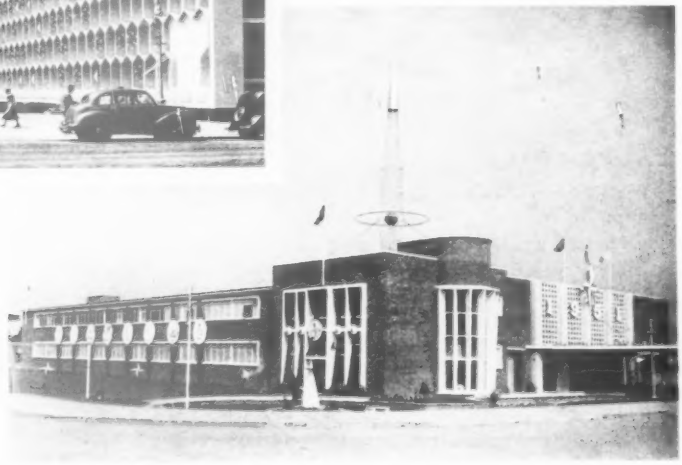
5

4



4
The Science Exhibition
BRIAN PEAKE
Co-ordinating Designer and Architect

6



1951 Review

5
The Cotswold Tradition Exhibition
OLIVER HILL

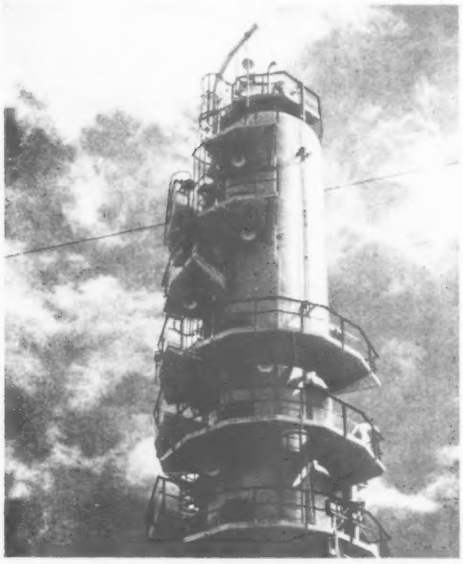
6
The Farm and Factory Exhibition, Belfast
WILLIAM de MAJO
Co-ordinating Designer

Survey of Industrial Architecture

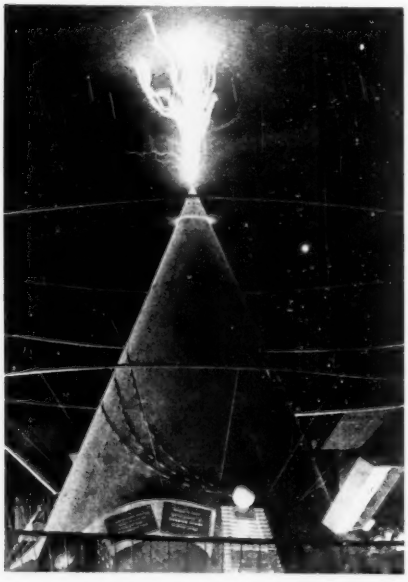
1951

BY EDWARD D. MILLS

WHEN making a survey of Industrial Architecture in the Festival Year of 1951, it is reasonable to briefly consider the various Festival of Britain Industry exhibits and the possible effect of the Festival architecture on industrial buildings in the future. At the South Bank The Mining Pavilion (Architects Co-operative Partnership) and the Power and Industry Pavilion (Grenfell Baines and H. J. Reifenberg) were both concerned with Britain's industrial power. The Mining Pavilion, a dramatic representation of a coal mine as seen from the bottom of the shaft, was an exciting piece of constructional ingenuity, but unfortunately the effects carefully planned by the architects were almost completely obliterated by the unimaginative interior display design (not devised by the architect of the Pavilion). The same fault was obvious to a lesser degree in the Power and Production Pavilion, here the best feature was the use of the first floor gallery overlooking the main floor so that actual manufacturing operations could be viewed from above. Many industrial concerns encourage visits from either the general public or specialist groups, and an arrangement similar to the South Bank one would allow visitors to see easily the manufacturing process in operation without interfering with the routine of the building or disturbing the operatives. At least one well-known manufacturer is adopting a similar scheme in a new building now on the architect's drawing board, on which construction is expected to commence this year.



Refinery plant at the Esso Oil Refinery, Fawley.



Part of the interior of the Industrial Power Exhibition at Glasgow, Festival of Britain.

During the summer months of 1951, in many towns and villages part of the Festival activities included "at homes" weeks in the local factories when the members of the general public were invited to tour the works accompanied by expert guides. No doubt many factory managers wished for better facilities for the reception of visitors. The idea of throwing open an industrial unit to inspection by the buying public is obviously an excellent one which many enlightened firms have put into practice for many years, and one which should not be confined to Festival occasions. If the idea is widely adopted, it can have a considerable effect on factory planning, for however useful the publicity gained in this way may be, frequent parties of visitors cannot be allowed to impede the flow of work or distract the workers, but will require a special circulation route for observers, separated from the production flow of materials and operatives.

While considering Festival activities mention must be made of the Industrial Power Exhibition at Kelvin Hall, Glasgow. (Basil Spence, Chief Architect.) The exhibition displayed the services from which Great Britain obtains its living power and livelihood. In a relatively limited space the designers, with greater success than at the South Bank, not only provided a vast amount of information but laid it out in such a way that it provided education and entertainment at the same time. Unfortunately, the attendances

at Kelvin Hall were disappointing in spite of the modest entrance fee.

The year 1951 was naturally a bumper year for Conferences, in July the M.A.R.S. Group acted as hosts for the C.I.A.M. Congress which brought Corbusier, Gropius, Gideon and many other well-known architectural personalities to these shores for a short visit. The most important conference dealing with matters relating to building was the first International Building Research Congress held in London during the month of September. During the course of the Congress papers were read on Factory Lighting; the use of Colour in Factories, and a symposium was held on Factory design. One of the interesting points raised in the session on factory lighting was the strong condemnation of the popular "northlight" in single-storey factories. W. A. Allen and J. B. Collins (Great Britain) in their paper maintained that the "northlight" is inappropriate for most kinds of work, because in providing light in one direction only it fails to light one side of the work, and casts hard shadows which make a factory look dirty, whether it is clean or not. The suggested alternative was the "north-south monitor" which introduces a limited amount of sunlight, and provides adequate cross light. The Building Research Station designed a roof light of this type in 1945 and since that date it has proved very satisfactory in use. In artificial lighting, a carefully devised mixture of fluorescent and tungsten lighting has been used in B.R.S. experiments with considerable success. The relationship of colour to lighting was stressed by Faber Burren (U.S.A.), and H. L. Gloag (Gt. Britain). In the symposium on Factories papers were given by F. A. Fairbrother (U.S.A.), Edward D. Mills (Gt. Britain) and G. P. Barnett (Gt. Britain). These dealt with Planning the Factory, Factors Influencing the Design of Industrial Buildings, and Working Conditions in Factories, respectively.

During the discussion that followed the formal papers, considerable emphasis was placed upon the importance of adequate briefing of the architect, speakers felt that in many cases industrialists did not analyse their requirements sufficiently before instructing an architect, and this often led to inadequate or even inaccurate working data, resulting in a building which failed to reach a satisfactory standard of efficiency through no fault of the designer. Other speakers emphasized the need for greater research into the disposal of factory effluent and waste products which in some cases are highly toxic and which cannot be absorbed by the local drainage or refuse disposal system. This is a matter of considerable importance particularly in relation to the Chemical and allied industries where the annual output of trade waste can be considerable and where the problem is often acute because of the nature of the effluent. The Congress was considered by all the delegates, who came from many different countries, to be a great success and hopes were expressed that the experiment would be repeated. If this is done, the second Congress could well consider some of the specific problems raised in the Factories Symposium, and similar problems raised in the discussions at other sessions.

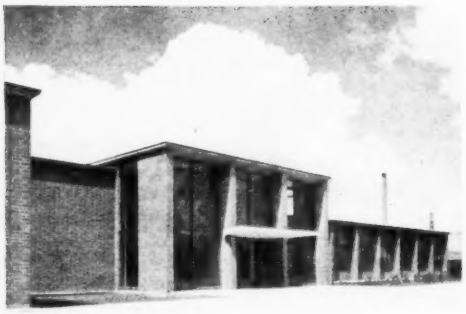
During the past year photographs of a number of new completed factories were published in the technical journals, these ranged from small manufacturing units to huge industrial units covering many acres on the American pattern, and involving the expenditure of vast sums of money. On looking through the industrial buildings illustrated in the *A. & B. N.* during the year, the largest projects appear to be the least interesting architecturally, and in many cases obvious opportunities for creating fine buildings have been missed. A particular case is the Esso Oil Refinery at Fawley, covering some 450 acres at a total cost of 37½ million pounds. This project was built in record time by British labour in conjunction with American refinery specialist technicians. The engineering installation of tanks, pipes, towers and cylinders, silver in colour, with their trim access stairways and inspection galleries makes an imposing and even monumental composition beside which the rather dreary neo-classic administration buildings look insignificant, and rather like old-fashioned intruders upon the set of a "futurist" film. Here was an opportunity for buildings as clean, efficient and bold as the plant they serve, an opportunity missed.

The Aero Research Company's Factory at Duxford.

The buildings at Duxford for Aero Research, Ltd. (Ove Arup & Partners), however, take full advantage of contemporary construction techniques. In this case the building was honestly designed, free of preconceived ideas, as an enclosure for a manufacturing plant, and the outward form of the building has been dictated by the various physical requirements of the user. The cantilevered offices and laboratories on the west side of the building not only provide convenient oversight of the plant within the building but also form an impressive feature on this elevation. The weakest parts of the building are such points as the entrance on the west front with its single isolated column. Of particular interest is the aluminium space frame to the Raw Materials stores roof, which is constructed of a specially designed aluminium extruded section, at a cost roughly the same as steel but considerably lighter. The result of an unbiased approach to the design problem in this example has been a lively and efficient production unit which has none of the dullness of the average standardized factory building.

The question of standardized factories is of special importance in the new towns where factory estates are being planned as part of the general development. Generally speaking, a standard factory cannot hope to fulfil all the

Interior of standard factory on the Harlow Factory Estate showing the B.R.S. Monitor Roof Light.



New Research Laboratories for the London Brick Company at Stewartby.

Canteen for the North Thames Gas Board at Bromley-by-Bow.

requirements of an unspecified manufacturer because the basis of good factory planning is a complete analysis of the requirements and methods of the process to be housed. This is probably why the standard factories at Harlow (Frederick Gibberd and V. Hammett) lack the liveliness of the Duxford building. At Harlow the designer could not have a real programme of requirements to work to as the future occupants of the factory were unknown, and he has, therefore, been forced to play safe. Details in these buildings are also the weak spots, a rather meagre entrance detail and a forced continuous window with structural columns set back from the glazing, but near enough to register from outside. The most interesting part of the standard factory type (approximately 20,000 sq ft floor area) is the use of the B.R.S. north-south monitor roof light giving a pleasant airy feeling to the production space with an average daylight factor at 7.5 over the whole floor. Colour has been used sensibly in the interiors and the wide spans and carefully arranged pipework make a pleasant working space. The Research Laboratories in the estate by the same architects, using similar materials and construction, are more successful, here the user and his requirements were known in advance, and details are better presumably because more money was available.

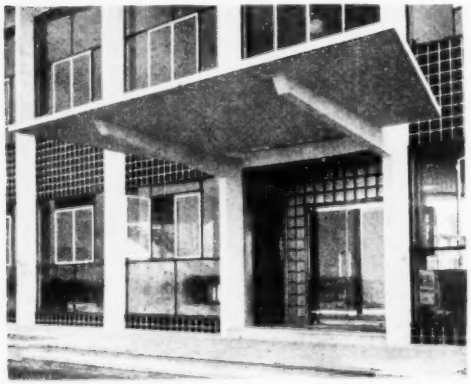
The average laboratory block in this country shows little appreciation of the work to be carried out in the laboratories, and it is not always fair to blame the architect, for scientific workers are not always willing to experiment with their laboratories, preferring a psuedo-classic building filled with laboratory fittings selected, seemingly at random, from the catalogues of the suppliers of scientific equipment. The London Brick Co. Research Laboratories at Stewartby (Architect Cecil C. Handisyde) have been designed for their specific function, and are quite naturally, in view of the client, mainly constructed in brick, the result is a clean, workmanlike group of buildings that expresses admirably the method of construction and the semi-industrial purpose of the building.

The structures laboratory at Wrexham Springs (Executive Architects Hugh Casson and Neville Conder), on the other hand was built for the Cement and Concrete Association, and was originally designed by the late Christopher Nicholson. This building not only houses the testing equipment but is also in itself a permanent testing ground for various concrete and cement surface finishings and rendering, this explains the great variety of materials and finishes used in the building. The building looks clean and sharp against the fir trees that line the site and makes a delightful centre for research work set in the garden of a large country house. (See page 96.)

Most factory architects have to face the problem of housing large service pipes, ventilation ducts, etc., keeping them out of sight as far as possible but readily accessible for repair and alteration work. In the factory extension for Coldense Ltd., near Bristol (Architect E. F. Prat) this problem was solved by the construction of service floors between each manufacturing floor, to house all the services, electric motors and trunking, etc., these were designed as prestressed concrete trusses 8 feet deep (Engineer Felix Samuely). The production area of the building is air conditioned, and the window walls are mainly of glass blocks, for thermal insulation, with small inset clear glazed windows for vision. The building is an exceptionally interesting technical solution to a complicated industrial problem, the external appearance, however, gives little indication of the structural method adopted.

The new Basingstoke factory for L. M. Van Moppes & Son, Ltd., (Architects Moiret and Wood) was designed for the making of diamond tools, diamond abrasives, and grading industrial diamonds. The architects have with reasonable success endeavoured to indicate these different functions in the exterior of the building, large-windowed north-facing offices for diamond sorting on the entrance front, single-storey northlight section for manufacture, and a laboratory unit overlooking the canteen. The laboratories appear to face south, and this may prove to be a disadvantage, for even during an English summer the sun can be sufficiently strong to be a nuisance in a laboratory. This building owes a great deal to its colour and when planting is completed will be a pleasant change from its neighbours on the Basingstoke By-pass. The detailing is generally excellent although it is unlikely that the edge of the concrete entrance canopy will stay clean for very long without some form of weather strip, preferably zinc, in a similar manner to the Harlow Laboratory, entrance detail (*A. & B. N.*, Nov. 22, 1951, page 601).

Gas Board buildings are often the target of the well-



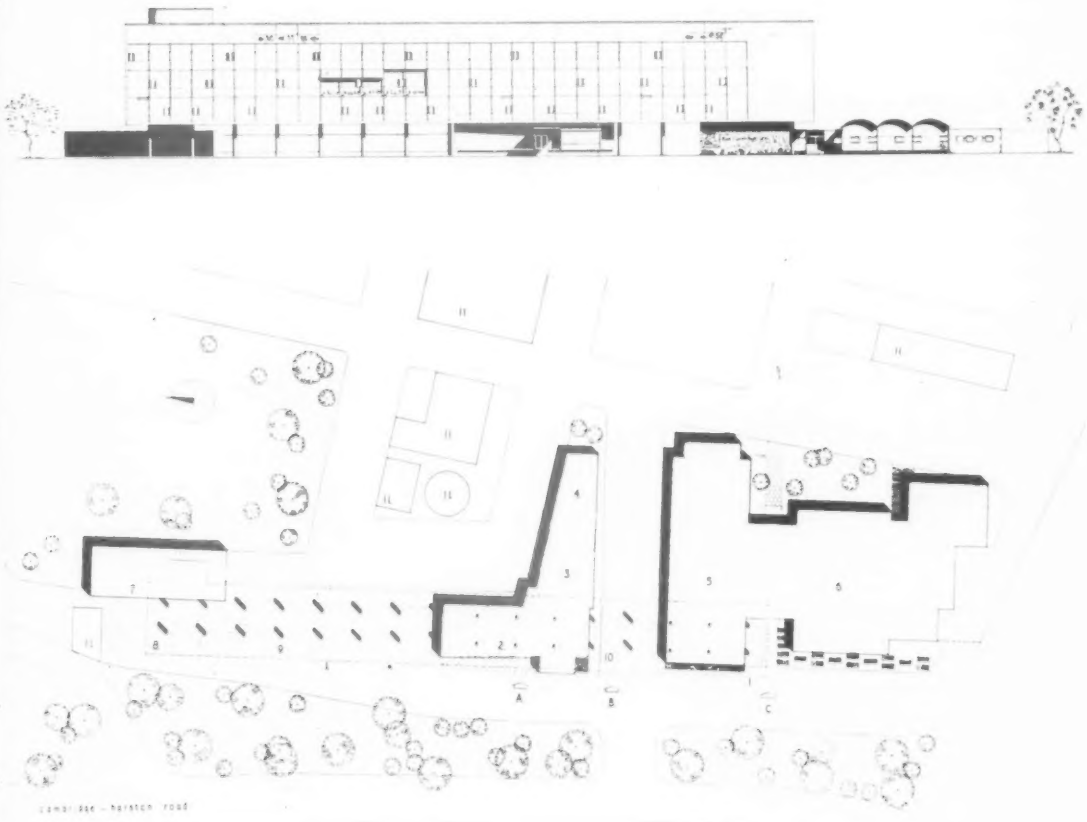
Entrance to new factory at Basingstoke for Messrs. L. M. Van Moppes.

deserved onslaught of ABNER, and it is therefore a welcome change to discover the North Thames Gas Board Canteen, at Bromley by Bow (Architect Elie Mayorcas) which deserves nothing but praise. This scheme, which consists of two separate buildings, the canteen, and the lavatory and workshop block, is surrounded by trim lawns and reminds one of the excellent work of the Mines Welfare Commission when Forshaw was in charge. Everything about this building looks clean and tidy, which is one of the best ways of ensuring that its users keep it in that condition. The canteen has sensible large windows looking south-west over gardens, but the roof members look heavier than one would expect with a light aluminium deck roofing.

With the Government cuts in capital expenditure, and rumours of a ban on new factory buildings, it is possible that 1952 may not be a good year for new industrial buildings, although a number of interesting schemes are awaiting licences or are at other stages of progress on drawing boards. It is to be hoped that the completed Brynmawr factory* will be published this year, and this will by itself provide ample material for a 1952 Industrial Building Survey

To sum up the year's work, it is obvious that the advice of the B.R.S. as regards lighting and colour is being taken seriously in relation to factory buildings. Factory owners and designers are beginning to realize that their buildings should express their function, and that the process flow of a manufacturing unit may have a marked effect on the planning and outward appearance of an industrial building. If this country is to survive its present economic difficulties it must be realized that efficient factory buildings have a higher production output than inefficient ones, and that workers in clean and tidy buildings have an incentive to keep them clean and tidy. The high standard of British workmanship has always been recognized as being unsurpassed anywhere in the world, and in this age of mechanization this high standard can only be maintained if industry in general ensures that the buildings it occupies reach an equally high standard in efficiency and appearance.

*(Architects Co-operative Partnership)



Block plan and main elevation of proposed administration and laboratory block for Pest Control Limited, Cambridge, on which work will commence in 1952. Architect Edward D. Mills.

EDUCATION FOR ARCHITECTURE

Where we stood in 1951, and where we should be going in 1952: A personal view

THE New Year is the most appropriate time to take stock. This would be a common-place statement to make and not worth printing had last year not been for many of us a year of extensive architectural education.

Three conferences on the subject plus Martin Brigg's paper at the R.I.B.A. conference, a journey to Italy which, for me at any rate, made up for an educational deficiency of long standing, the Building Research Congress, and, of course, the South Bank. If I add to this the architectural education one constantly receives by trying to impart it, the year has really been outstanding for formulating thoughts on the matter and clarifying the picture of the road we are about to take.

Architectural education finds itself faced with what has become a dual duty, that of training young people to become good practising architects and at the same time opening their eyes to the in itself no longer new and inevitable trend of architecture in our time. Many of the controversies raging about the architects' schooling are based on the criticism levelled at the schools of over-emphasizing the latter, an "airy fairy philosophy," at the expense of the former, and so one of the questions mostly debated at the various conferences is one of "training" versus "education."

This differentiation would perhaps never have arisen if two other problems were not linked with this: The low standard of cultural background and so-called taste among the entries to the schools and the apparent schism between the requirements of the "practitioner" and the school curricula.

I believe that that schism need not exist if the former problem were tackled with greater understanding on the whole of the road on which we are progressing, as then the second would solve itself.

In the following an attempt is made to analyse the points as they arose during the various educational events of 1951.

The first conference of the year was held by the teachers of the London region at the R.I.B.A., with Prof. Richardson in the chair. (*A. & B. N.*, May 11th, 1951). Papers mainly dealt with the teaching of history of architecture and structural theory. Periods of history should only be studied with a view to their value in being able to contribute to design in our time. This was very much the same attitude as was to be taken at C.I.A.M. later by Giedion. Further it should serve as a background and lend perspective to the study of architecture of to-day particularly to the much maligned student of "no background," lest he would be left under the impression that architecture consisted of schools, a concert hall and the Housing Manual. The architecture of Italy, Greece or France tended to be overrated!

The theory of structure was rightly regarded as a means of understanding structure and to enable the architect to work with the engineer. On the whole it was not stressed to the same extent as at later conferences as the "only theory" that really mattered.

The second conference was that of the "Northern Region" held up on the moors at Ilkley. (*A. & B. N.*, June 15, 1951). The outstanding contribution here was a report on the first Board of Architectural Education of 1904, which contained the answer to almost all the questions as to the right approach summarized in Lethaby's definition that

"Construction was the basis to Architecture and Architecture was the interpretation of Construction into form of æsthetic significance."

And further,

"Abstract form was shown to be fulfilling a definite function" and

"Deliberate attempts to reproduce certain phases of historic styles should be discouraged."

This was in 1904 and repeating what I said before, "and after 47 years we are still debating the orders!"

Otherwise most papers including that of Prof. Evans on the civil engineer's position to architecture were concerned with the vital need for a more liberal education of the student of architecture and Mr. Eden in his well-known scholarly manner, quoting Vitruvius' dictum that art consisted of "Theory and Practice" stated that a School could and should only convey the "Theory," and practice would be left to later life.

With this Mr. Eden set the pace for all the discussions, "Theory or Practice." Incidentally, confining "theory" to that of design there was only one to the 18th century scholar, that of structures!

Professor Budden's history of the Liverpool School was a history of architectural education in this country in itself. Low standard of English and Maths even among university students mentioned in passing constituted also one of the major sore points encountered by teachers of architecture everywhere.

A brilliant paper on the Oxford Greats was an example of mere "Theory," a training of the mind, detached from the realities of our life.

The Climax of the conferences on architectural education was that held at the R.I.B.A. by C.I.A.M., with Walter Gropius as the main speaker. (*A. & B. N.*, July 26, 1951.)

C.I.A.M.'s problem here seemed the same as we found in all the other conferences. To Gropius the educational background of the students was also a problem. He pleaded for the development of creativeness in education rather than the mere imparting of facts. We should make art rather than merely learn about it. There were certain artistic qualities latent in all of us and it was up to education to bring these out. History should be an instrument to enable us to understand our own age. He attacked the "intellectual" approach to design instead of a more "sensorial" one, but otherwise what we needed was engineering and engineering.

His chief point, however, was this: The architect must return to the production process, must work with the industry if he wants to survive and regain his position at the head of the team. The "Prima Donna" days of the architect as the gentleman trustee have gone, whether the professional organizations like it or not! Giedion later also made statics the base to all design and history as mentioned, was to serve us where it could, but no more. We still had to attack the "Fortress" in the shape of the Academies.

These vital factors stand out from this meeting:—

As Mr. Rogers (Milan) points out, we are in a state of revolution rather than mere transition. The position of the architect and architecture itself is in the melting pot and as Chermayeff summed up, most of Gropius' and the Bauhaus' prophecies of 25 years ago have come to pass.

Like Lethaby in 1904 and Gropius with the Bauhaus, all good teachers should be prophets if education is to be more than a mere conveying of facts, in the sense that great artists are prophets, prophecy being a heightened awareness of the inevitable trend. To the less aware this might often appear as seeing into the future.

The trends in architectural education, therefore, should be the advance guard of things to come if correctly interpreted.

These seem to be the outstanding features of this trend:

Based on the generally observed low standard of cultural background and "taste" among the new students and the acknowledgement of the importance of "education" as different from "training" the almost unanimous demand for a more liberal education.

The overdue though still hesitant recognition of the fact that architectural history and historic styles have been over-

"Pure building and pure engineering." Brunelleschi's arcades of S. Lorenzo, Florence, with the dome in the background.

Inspiration for form in 1951.

rated and should only be used where they could be of definite service to contemporary design.

The demand for more engineering and science culminating in Gropius' appeal to architects to rejoin the production process.

All these items apparently so heterogeneous such as the need for more liberal education on one side and a return to industry on the other are symptoms of the same complaint.

This is an age of revolution, not merely of transition. There is less similarity between the last 100 years and the preceding 3,000 than between any of the phases of the last 3,000 years. Civilization appears to develop through three stages, the empirical, the experimental and the mature. After a slow growth lasting many ages and a more rapid passing through the second stage we are at the beginning of the third. This civilization as was said in the editorial of the last issue of 1951, is adolescent and humanity is passing through its last growing pains. Architecturally speaking, it is this as I see it:

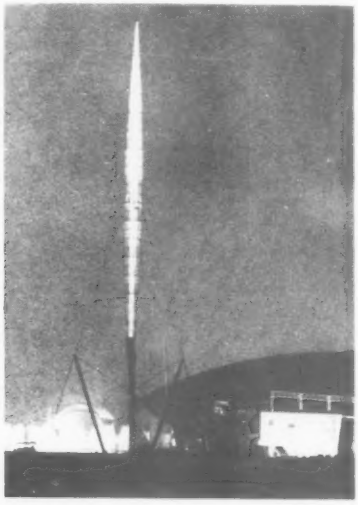
The empirical stage was signified by human activity being dictated by nature, building by the great limitations of unmastered materials. The empirical stage culminated in such master works as the Pont du Gard, Rheims or King's College, Cambridge. The Renaissance represents the beginning of the experimental stage, rational thought took over from irrational groping. It refuses to be dictated by limitations imposed by nature. This led to the beginning of the end of structural form which could be easily apprehended by the eye or understood by association. Classic form derived from its simple post and lintol action, a refined form of Stonehenge, becomes divorced from this and acquires a new purely intellectual meaning. While form is being analysed by men like Palladio and Alberti, it remains after all post and lintol, but taken out of its context.

From this point of view the greatest contribution from that vital era comes to us through Brunelleschi. He is a builder and constructor. His inspiration like that of all great artists does not derive from an intellectual analysis of form, but from a great awareness of life round him, the vernacular of Tuscany. Like Bach's great art which is a refined and inspired development of the music making of his time and the simple choral singing of his church, so Brunelleschi's earlier and finest work comes from the buildings of the peasants of Tuscany, the cloisters of the monasteries with their sheltering arcades and protecting eaves. It is pure building where form is only the result of sensitive handling of structural elements. In the case of the dome to Florence Cathedral it is pure engineering. Its form is more dynamic in its curvature and represents a truer structural line than any Renaissance dome I know based on more preconceived intellectual form. Although Renaissance in time it is Gothic in spirit. And so Gothic which is pure building and form derived from structure and contents has more to say to us than the Renaissance. It is my contention that the Renaissance architecturally has done more harm to us than good. It created the man of taste, of taste acquired through learnedness. In its philosophical or historic sense the conception of taste should be eliminated from an architect's or educator's vocabulary! It represents an intellectual analytical approach to beauty, form without "significance" and the very antidote to Gropius' "sensorial" approach.

We are the heirs to the Renaissance. We have inherited that fatal approach to architecture which aims at form for its own sake. Whether this form is derived from the classics or a space-time conception, it is still conscious form. Neither Alberti's rules nor Le Corbusier's "module" is architecture. Architecture is the definition of space by means of structure and form will be derived from its harmonious flow.

The man in the street and his son who comes to our schools is frightened of æsthetics, this new word for "taste." That is why he appears a moron. He will be far less of a moron when it comes to a vintage "Lagonda" or the fine lines of a boat! The motor car worker of Coventry is more easily accessible to a feeling for good design than the learned snob, because here is form with meaning.

"Everybody has certain artistic qualities latent in him," so let us bring these out by teaching to b u i l d, nothing but to build, but all the time making the student aware of elegance of flow of form, let him look at buildings as products of engineering like cars, ships and aeroplanes, use the word "design" as the engineer uses it, but without falling into the trap of misunderstood "functionalism" where structure might again become an end in itself, where it must be "expressed" at all cost! So guided we shall teach and learn to construct buildings which will be good architecture free from preconceived ideas and free from a childish preoccupation with meaningless form. The student of this era must be capable of inspiration, more than ever, there is no set code of form as yet. I say as yet, be-



Two worlds

cause inspiration might only be a heightened awareness of relationships, a shortcut, until scientific analysis may replace it. After all, what appears artistic inspiration to-day may be scientific knowledge to-morrow!

In this way we shall supply in our schools both the "Theory" and the "Practice," and close the gap between "designer" and "practitioner."

So, where are we going? Architecture as we have known it is rapidly becoming a thing of the past and with it another heritage of the Renaissance, the artist as an impersonation of the conception of "l'art pour l'art," "art" will revert to its original latin meaning of "skill" still given in the Oxford dictionary as its first meaning, and architecture will become a form of engineering based on increasing scientific knowledge and carried out with "skill." What matters will be the contents, the space requirements, and these will dictate the structure. Buildings will be well designed commodities, which will serve us rather than that we should serve them! Our whole attitude to buildings is changing. What matters, also emotionally, is the "performance" they afford. We can no longer project ourselves directly into the action of structure, identifying ourselves for instance with the beam in the cottage bending under its load, we lose our sentimental associations with houses. In common with all sciences we enter the last phase of adolescence or the first of maturity by getting down to fundamentals. And as we are becoming more and more aware of this, we as architects must further this trend rather than retard it artificially by insisting on our "æsthetic" approach.

For the time being we shall still have to work with so-called "traditional" materials, laboriously pile unit upon unit, but still we can regard them as units in an engineering process and use them with all the elegance at our disposal, rationally and with the economy science permits.

This, then, seems to be a message for 1952: This is not an age of frustration or an era of doom. It has the greatest possibilities if only we understand and acknowledge these. We have left the experimental stage and have entered for the first time an era when we shall master nature, not only in architecture. But mentally we are still so close to Stonehenge when physically we have travelled so far and so no wonder we cannot cope and sit expecting our doom when it is merely the end of the first stage of history and the doom may be of all the dear sentiments and associations. No, this is an exciting beginning, the "end of the beginning," in fact, of an age which will set us free to live!

H. W. ROSENTHAL

SOME RECENT TECHNICAL BOOKS PUBLISHED BY ILIFFE & SONS LTD.

"STEELS IN MODERN INDUSTRY: A Comprehensive Survey by 29 Specialist Contributors." General Editor, W. E. Benbow. First Published November 16, 1951, for IRON AND STEEL by Iliffe and Sons Limited, Dorset House, Stamford Street, London, S.E.1. Price 42s (Postage 11d). Size 8¼ × 5½in. Cloth bound with cover.

The book, which comprises more than 550 pages, with some 260 illustrations, was planned by a committee of eminent engineers and metallurgists headed by Dr. H. J. Gough, C.B., M.B.E., M.I.Mech.E., F.R.S., president of the Institution of Mechanical Engineers in 1949-50, who contributes the foreword. Following an introductory section devoted as briefly as possible to the basic metallurgy of steel, there are 25 sections, written by 29 Specialists, each section presenting concisely what the engineer needs to know about properties of steels, their treatment, and their applications in various branches of engineering. A very full subject index enables ready reference to the detailed information provided throughout the book, which was produced under the general editorship of the Editor of IRON AND STEEL. In addition, selected bibliographies give references to further reading in the technical literature on the treatment and usage of steels.

"PLASTICS PROGRESS: Papers and discussions at BRITISH PLASTICS CONVENTION, 1951." Published on October 25, 1951, for BRITISH PLASTICS by Iliffe and Sons Limited, Dorset House, Stamford Street, London, S.E.1. Price 50s (postage 1s 3d). Size 11½in × 8½in. 310 pages. Cloth bound.

This book is a collection of Papers which demonstrate recent developments in the technology of plastics and their importance in various industrial and other non-consumer applications. These include: Textiles, aircraft, automobiles and ships, building and architecture, the chemical industries, packaging, and surgery and medicine. The importance of plastics in these applications is discussed in a Paper "The Place of Plastics in Industry," by Sir Ben Lockspeiser, F.R.S.

Advances in Plastics technology are described in Papers devoted to progress in plastics materials; vinyl formulation and compounding; true synthetic fibres; developments in synthetic resins; techniques of fabrication; film production and handling; and developments in processing plant. The buying and selling of plastics is also considered.

The text of the book, which is based on the lectures given at the British Plastics Convention, 1951, contains approximately a quarter of a million words, copiously illustrated by over 400 photographs and diagrams, and 60 tables.

A REVIEW OF SOME

BUILDING DEVELOPMENTS

of 1951

Each new year since the war seems to have been less inviting than its predecessor. The prospect for 1952 cannot be said to look bright for building. Doubtless, however, when the time comes to look back on 1952 it will look much brighter in retrospect than in prospect.

In this brief review of some of the advances made during 1951 there lies the hope of further progress in 1952. The problems facing architects, builders and manufacturers to-day need hardly be repeated.

The need for economy, the need for increased production, the maintaining of standards of building and manufacture and the most practical use of materials and labour are still paramount.

The illustrations and text in the following pages deal with some examples of the progress which has been made in

STRUCTURE ★ SERVICES ★ FINISHES ★ FITTINGS ★ PLANT

DESPITE difficulties, complaints, shortages of materials and rising costs of labour, 1951 was a notable year for the Building Industry. Early in the year the biggest ever B.I.F. in London and Birmingham had a record number of exhibitors of building materials and plant and engineering products. The Festival of Britain at the South Bank, and in centres throughout the country, produced examples of the latest trends in design and, of course, use of building materials. Then came the Building Research Congress—the final reports of the discussions on the numerous papers are still to be published. Towards the end of the year the biggest ever Building Exhibition was held at Olympia.

Interspersed with these major events there were lesser exhibitions, congresses, conferences and lectures on almost every subject connected with building. And somehow, in the midst of all this activity—which aimed to show Britain's progress, production capacity and craftsmanship—the work of actual building continued, albeit under difficulties.

The events mentioned above have, of course, made their individual contributions to the future. But the influence of the exhibitions, the discussions, etc., will not, probably, be felt in the body of the Industry for some considerable time. It is too early to judge.

So, in reviewing some developments of 1951 it is well to have a look at what is happening on sites, in production shops and in drawing offices. Judgment on what has been achieved can only be passed on actual work done, which, although it may be less spectacular than the ideals aimed at by exhibition standards, is nevertheless the measure of our real progress.

The following review is by no means comprehensive. Nor is it claimed that the examples chosen are of revolutionary character.

The aim has been to think around various aspects of building and to choose representative illustrations to the text without any attempt to state that selected examples are necessarily the best or, indeed, the only ones of their kind.

STRUCTURE

THE opportunity for development in building technique to-day and in the foreseeable future in this country is confined largely to industrial work and housing work. In the latter category construction is affected chiefly by choice of materials since planning and size are limited.

In the industrial field, however, there are many external factors to be considered which affect the type of plan: the plan itself controls to a certain degree the method of construction and this in turn affects the choice of material.

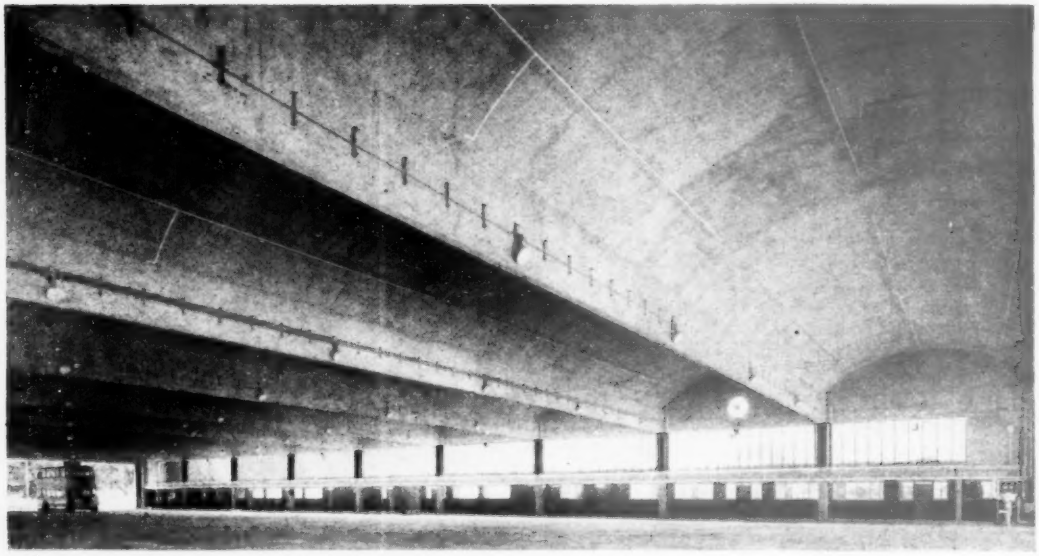
The designing of industrial buildings is to-day a complicated affair requiring close co-operation between designer, structural engineer, numerous service engineers, the contractor and—perhaps most important—the client. Plant layout, lighting, heating, ventilation, sound insulation; all these are factors affecting the output of the worker and are now receiving the attention they deserve. But apart from this the necessity to make provision for future requirements is now appreciated to a greater extent than in the past, and with the growing complexity and size of machinery required to meet contemporary needs, it seems that one essential requirement of modern industrial planning is the provision of the largest possible clear floor space which can be freely used by the client. With the advantages thus provided, however, there come difficulties in providing services. The tendency is to use floor ducts and the roof. In a later section of this review some recent solutions of the problems of industrial lighting over large spans and in high buildings are illustrated.

The effect of the need for larger spans on construction can be seen in buildings recently erected or in course of construction throughout the country. A major contribution to the solution of the problem is the shell roof.

1951 saw the completion of factories at Crawley New Town. Here the need was for flexibility of internal division. But the system is, of course, ideally suited to buildings which require no internal division and a maximum area of column-free floor. In such circumstances pre-stressed concrete combined with shell roof construction is achieving remarkable spans. One example from 1951 is the Bournemouth Corporation Transport Depot.

The garage building in this depot, which is ultimately to be duplicated, gives a column-free covered space of approximately 45,000 sq ft—300ft long by 150ft wide. This span of 150ft is the largest yet constructed in this country with pre-stressed edge beams and a shell roof. The roof is a reinforced concrete thin shell structure made up of nine cylindrical-shaped vaults with pre-stressing in the edge beams. The span which is transversal, bridges the 150ft width of the building without intermediate support. All nine vaults have a radius of curvature of 22ft 10½in, a rise from springing to crown of 6ft 9⅛in and, except at the ends and springing, where there is some slight increase, a shell thickness of 2½in. The chord width all through is 33ft. Intermediate edge beams are alike 10in wide and 5ft 6in deep. The external edge beams are slightly larger and have an upstand. These were cast *in situ* and post-tensioned by the Magnel-Blaton system.

A rubber core was used to form the cable ducts and the cable was threaded in after withdrawal of the core. The wire used was 0.276in (7mm) diameter hard drawn steel of 95 to 110 tons ultimate strength. With an extension of 7½in on the 150ft span the stress induced in the 152 wires used in each intermediate edge beam was 125,000 lb per sq in, which in turn induced a total compressive force in the concrete of 1,136,250lb (507.4 tons). Under the constructional loads this compressive force was sufficient to "hog" the beams ⅜in. A 15 per cent allowance was made for losses due to concrete shrinkage

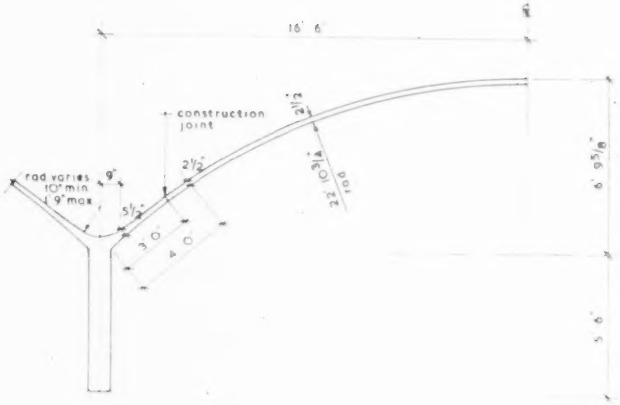


and to creep in the steel and the concrete, which occur with time. The final prestress, therefore, is not less than 430 tons (507.4 tons minus 15 per cent).

Columns supporting the roof carry all the vertical loading and the moments induced by wind on the building as a whole. For these the concrete used was a nominal 1 : 2 : 4 mix which was vibrated. The reinforcement was of ordinary round mild steel rods. In general, the foundations, for which a safe ground pressure of 2½ tons was taken, are 3ft 6in down. Inside the building the clear height from floor to underside of edge beam is 19ft, a dimension which has been adopted to suit trolley 'buses. There is no roof lighting. The calculated value of natural illumination from the side lighting provided is: 15.00 lumens per sq ft—with doors open 9.50 lumens per sq ft—with doors closed whereas the recommended value in the Code of the I.E.S. for garages of this kind where only general maintenance is undertaken is given as 7.00 lumens per sq ft. Artificial light comes from parabolic dispersive reflectors fitted to the beams, which direct light along the lanes between the parked vehicles. There is no heating except to the offices block but the garage and offices are both fitted with a sprinkler system.

The architects for this depot were Jackson and Greenen. Consulting Engineers were R. Travers Morgan and Partners and the main contractors were James Drewitt and Son, Ltd. The prestressed work was carried out by the Vibrated Concrete Construction Co., Ltd. and reinforcement was by Twisteel, Ltd.

Another method of obtaining large spans is demonstrated by the new hangars, completed during the year at London airport (*A. & B.N.*, July 26). These are the first aluminium alloy hangars to be erected in England. Twin portal frames were used, the span between frame hinges being 145ft 6in. The construction was by Structural and Mechanical Development Engineers, Ltd., and the consulting architects were A. F. Hare and Partners.



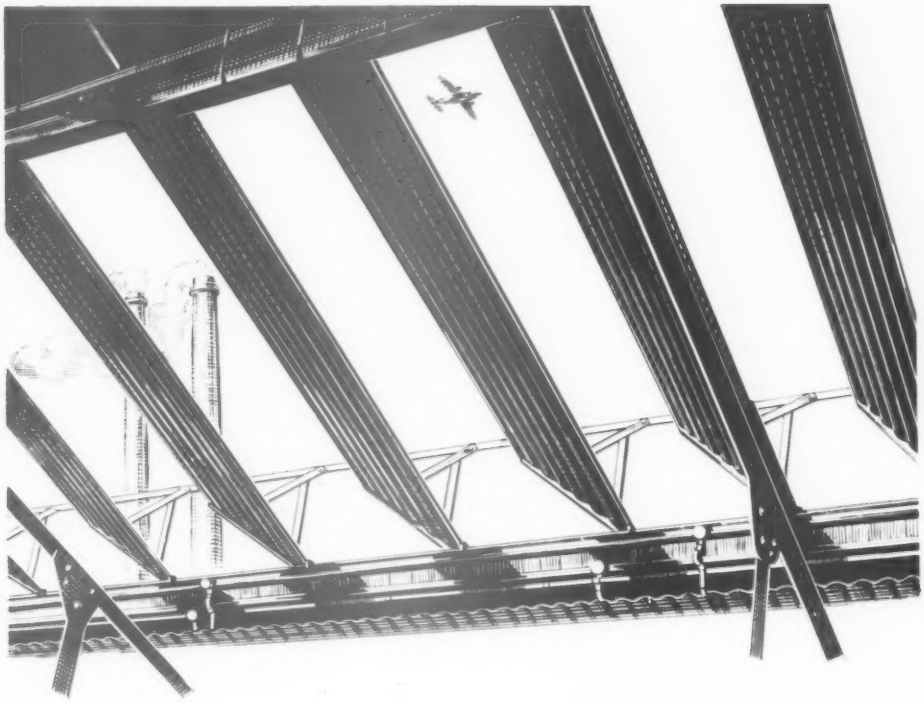
Cross section showing dimensions.

BOURNEMOUTH CORPORATION TRANSPORT DEPOT

Architects: Jackson & Greenen

The photograph and section above show the construction of the shell roof of the garage building. The barrels span 33ft between centres of edge beams. The edge beams themselves are prestressed and span 150ft—the largest span for this type of construction so far carried out in this country. Natural lighting is from the side walls. Artificial lighting points along the edge beams are spaced to light down the rows of buses when the garage is occupied. Beneath the clerestory windows can be seen offices, messroom, lavatories, workshop, stores, etc.

The total length of the garage illustrated is 297ft having nine barrels. For further details see text.



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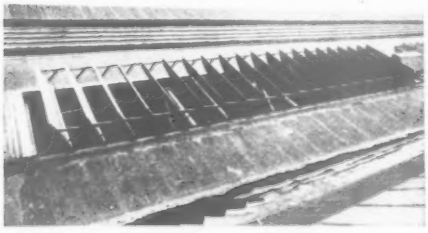

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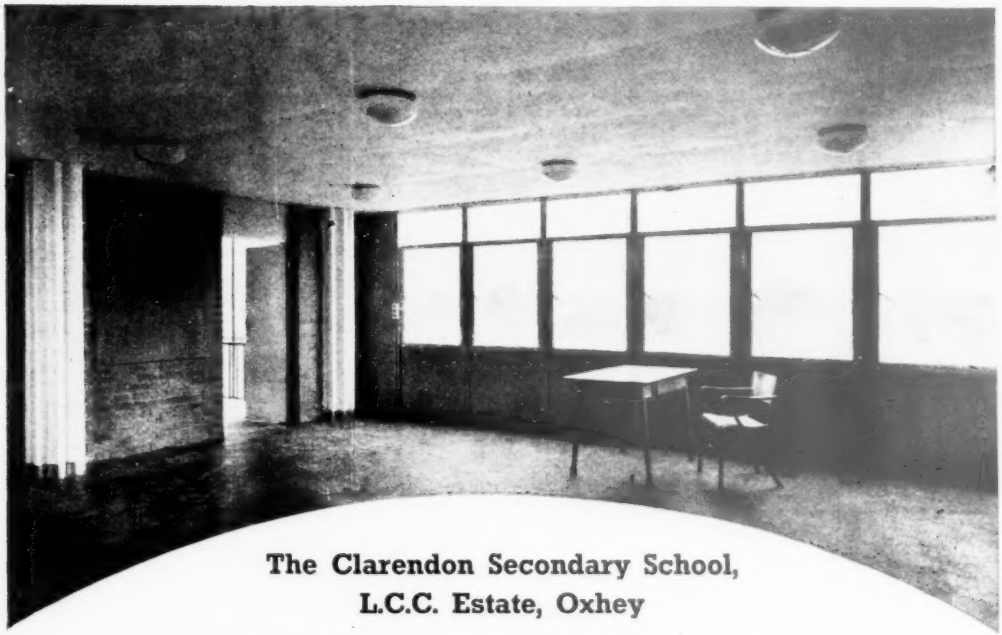

The Clarendon Secondary School, L.C.C. Estate, Oxhey

The ceilings of these prototype classrooms and the Holoplast panels forming the outside walls are insulated with

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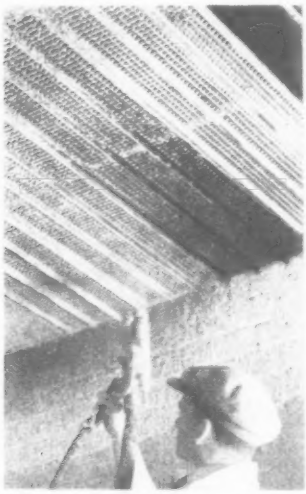
Above left : the Schindler-Goehener houses at Hatherley, Gloucestershire, architects Henning and Chitty. See text this page. The chimney stacks, above right, are built at ground level. A reinforced slab incorporating a lifting bar forms the base of the stack which is hoisted into position by crane

Here then were two major contributions towards large span structures in 1951.

Before turning to examples of smaller structural work reference should be made to the timber sheds at Shoreham-by-Sea (*A. & B.N.*, Sept. 27). Here the span is 105ft bridged by portal-type frames built up from short length timber joined with timber connectors



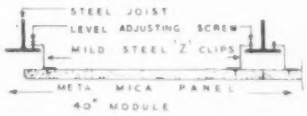
Surface finishing by spray gun, here demonstrated as a ceiling finish on metal lathing, is equally applicable to walls and other surfaces of any type of material. Pyrok is the name ; see text. The manufacturing company are Pyrok Ltd.

These three buildings, and others like them, built in the face of prevailing difficulties are, it would seem, of more value as examples of research and progress than any amount of talk and theoretical design.

Turning now to miscellaneous structural developments on a smaller scale the past year has produced many efforts to arrive at more economical methods of building houses. The main requirements need no repetition here. The crux of the situation, given the materials, is cost. Greater speed in building would undoubtedly reduce costs and on this count the protagonists of prefabrication have been able in many cases to quote apparently cheaper prices for a finished house. But too often the quoted price is unrealistic since it does not take into account site work and other allied costs. Moreover the appearance of some types of prefabricated house is not all that it might be. One exception—there are others—is the type illustrated at the top of this page. The basic structural design has been adapted from the Schindler-Goehener house by Hawksley Constructions by arrangement with G. Schindler, the Swiss architect. Messrs. Henning and Chitty were the architects in this country.

These houses, eighty-four of which are being built at Hatherley, in Gloucestershire, are the first of their kind in this country. The houses are built round a concrete framework. External walling and tiling are carried out in traditional manner. Internal walls, floors, windows and doors are factory made. The wall and floor units are in large sections, hoisted into position by crane. The chimney stacks are built at ground level and hoisted complete. This combination of dry internal construction combined with methods which produce a good looking exterior may well be the basis of future research and progress in the housing field, particularly if the research into the use of mono-tower cranes, now being carried out by the D.S.I.R. at Elstree, results in greater use being made of such cranes on housing sites. The reference to dry methods of internal finish above is a reminder that skim plaster coat is often necessary if smooth wall finishes are required on prefabricated units.

Plastering by traditional methods will, of course, continue to be cheapest and best for many forms of construction. But note must be made here of the application of a surface finish by spraying which is illustrated on this page. The sprayed



Structure and finish combined in a new product by Meta-Mica Ltd. Light in weight, easily fixed, a good insulator this product of 1951 provides a time-saving and therefore cost-saving ceiling. Section shows the method of fixing by clips.

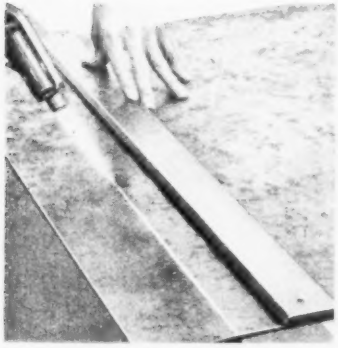
material is not merely a plaster. The mix consists of cement, exfoliated vermiculite, a lime plasticizer and water. It can be used for a number of purposes, internal or external, plain or coloured, and can be applied to any surface. The speed with which it can be applied is one factor which has resulted in its increased use on many different types of buildings during 1951. Such use of mechanical application technique producing finishes which may be traditional or experimental is to be commended.

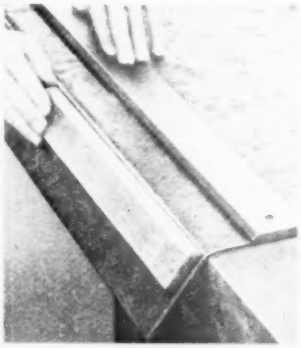
There are, of course, many cases in which dry finishes, which show the jointing are satisfactory, even desirable. Visually it is important that the jointing should be regulated and this is not always easy to achieve where units are large.

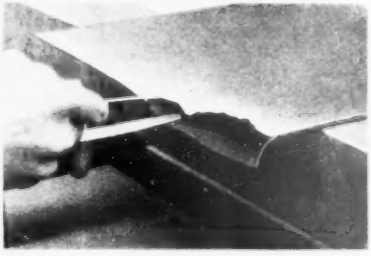
A notable contribution in the form of prefabricated ceiling panels was made during 1951. This is the Meta-Mica ceiling, a prototype of which was shown at the Building Exhibition. Illustrations page 119. The panels were originally designed by the Architectural Department of the Ministry of Education. The panels are 40in × 20in × 1¼in thick and weigh about 4lb per sq ft. The edges are chamfered to form a vee joint. The panels themselves are reinforced and may be either off-white or tinted. The ceiling offers two-hour resistance to fire, has an average sound absorption coefficient of about 0.45 and a K value of 0.85 B.Th.U./sq ft/hr/°F/in.

Originally designed for schools it may safely be anticipated that these panels will be extensively specified in future for factories, stores (which demand even temperatures), kitchens (to reduce condensation) and other buildings. It is not claimed that they have uses for ordinary domestic buildings.

The last pictorial example in this section (see four pictures below), shows a new roofing and flashing material, based on asbestos and bitumen, and placed on the market in the latter part of the year by Cellactite and British Uralite, Ltd. This material, in view of shortages or high cost of light metal roofings is a development of considerable interest.







Nuralite is a new product introduced during 1951, but it is based on materials which in other fields have proved their resistance to weather—asbestos and bitumen.

The architect's first question will be "what is its life"? To this there can be no proved answer until more is seen of the material's reaction to actual use.

One of the first jobs on which it has been used is a group of houses at Gravesend designed by A. W. R. Hewitt, A.R.I.B.A. Here it has been employed for tops, and cheeks for dormers and for soakers. The accompanying illustrations show the malleability of the material which can be dressed and jointed with the ease and accuracy associated with light roofing materials which at present are either in short supply or so costly as to prevent their use on many buildings. Supplies are said to be plentiful. Nuralite, a product of Cellactite and British Uralite Ltd. is supplied in standard sheets 8ft × 3ft. The weight is approximately 8oz per sq ft. Thus, one sheet weighs about 12lb and an 8ft length of valley gutter weighs about 10lb.

The material can be moulded and is supplied as ridge capping and hip tiling, the weight for 8ft of 30in girth being about 10lb.

The initial colour of the material is black but the makers claim that weathering reduces the black to a grey—a colour which will blend suitably with slate roofs.

All the normal processes of fixing which can be carried out on light metal roofings can, it is claimed, be as simply done with Nuralite.

SERVICES (heating)

Two heating installations of 1951 have been chosen for this review. Each is different from the other and each has particular merit in view of the continued shortage and rising cost of fuel.

The AGA installation, parts of which are illustrated here is of interest since it is the first combined heating system using these particular units to be planned for a new house. In consequence it has been possible to provide a tidier and more economical layout than when inserting the system into an existing building. The picture top right page 121 shows the compactness of the combined cooker and Agamatic water heater. Two points of interest in the installation are worth noting: First, the two flues—one from the cooker and the other from the water-heater—were gathered into a common flue at a height of 9ft above floor level; a controllable air vent, to prevent condensation, being placed in the flue from the cooker as shown in the picture, top left, page 121. Two inspection panels, one for each flue, were built into the back of the flues.

The second item, which would have created difficulties in a finished building, is the incorporation of a "spinal" duct running the length of the house to take the return pipe and to collect all drops to the return pipe. This pipe is lagged throughout its length with granulated cork as shown in the picture, lower left, page 121.

This house designed for C. E. C. Herbert, Esq., at Richmond by E. Blair, student R.I.B.A., was built by W. A. Cooper of Kingston.

The heating units in each room served by the Agamatic water heater are panel type radiators. Domestic hot water is also provided by the water heater to baths and wash basins.

The gas-fired boiler at the foot of page 121 is new to the building world.

The boiler consists of a multi-tubular heat exchanger mounted on a stand, which also forms the housing for the burner assembly, and support for the slab form of insulation. The whole is surrounded by a stove-enamelled M.S. sheet casing, with all panels fully detachable and interchangeable, and incorporating a down-draught diverter built integrally into the top section. Two flow and return tappings are provided at the sides. A water limit thermostat is provided as standard and room thermostat and clock control can be supplied if desired The burner equipment includes relay valve, governor and automatic pilots.

The boiler is very compact in relation to rated capacity.

Thermometer, safety valve, and altitude gauge are not provided for on the boiler itself, these fitments being left to the heating engineers to fit in the water circuit adjacent to the boiler, although they can be supplied if desired.

The heat exchanger consists of a number of horizontal water tubes between which the hot gases pass vertically. The tubes connect between two rectangular section header boxes.

The tubes are of solid-drawn steel of a suitable gauge for the size of the boiler, in the case of 150,000 B.Th.U./Hr. the tubes are 1ft 3in long by 12 gauge.

The header boxes are fabricated from ¼in M.S. plate suitably reinforced by ribbing of ¾in by ¼in strips welded internally in such a way as not to interfere

Above : the duct in the ground floor of a new house for the return of the Agamatic heating pipe. The pipe is lagged with granulated cork.

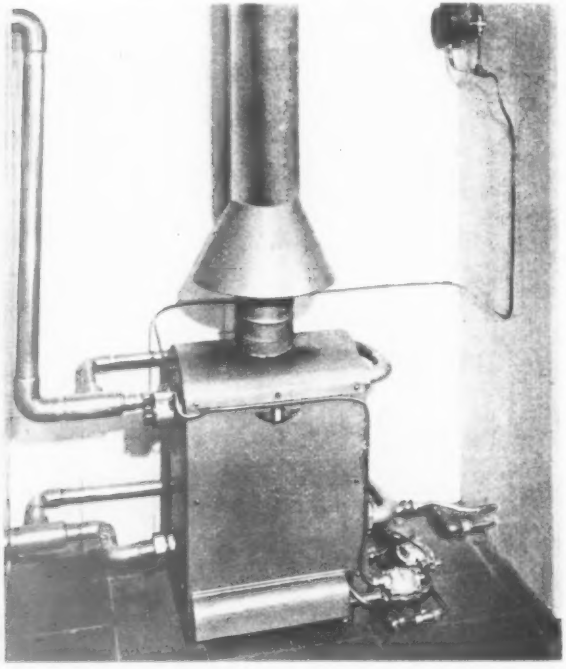
with the flow of water. The tappings are taken from these headers. The tubes are welded into the headers and subjected to hydraulic tests.

The outer case consists essentially of a boiler base housing the burner, the four main corner posts and four detachable panels, with a top section incorporating the down draught diverter.

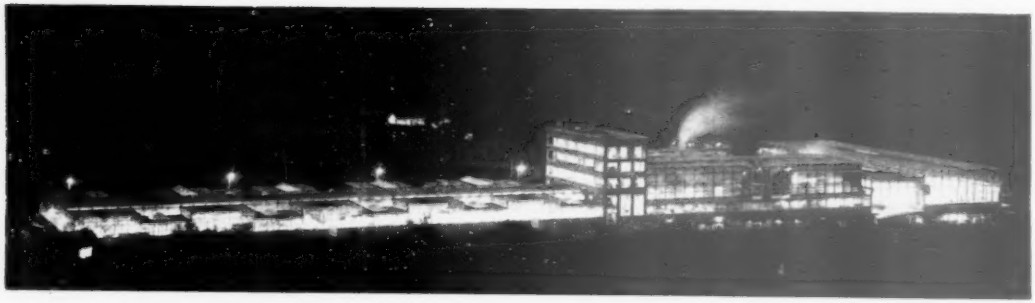
The base is constructed from $\frac{1}{16}$in M.S. plate with a slotted plate to form a platform for the burners.

This unit appears to be a compact, economical and—as the picture shows—clean method of heating.

This combined cooking and water-heating unit, comprising standard Aga boiler and Agamatic water heater is the first to be planned for a new house. Some features of the installation are described in the accompanying text.
Above left : Tiling completed round the stove position. The picture shows the twin flue outlets and near ceiling level the air inlet to the cooker flue. Flow and return pipes, built in, await connection to the water heater.



The new Plant gas-boiler, described on this page, is a compact, easily maintained and clean method of providing constant house heating. Thermostatic control is provided. The finish can be cream or black or to special requirements.



New paper mills at Llangynwyd, Glamorgan for the Bridgend Paper Mills, Ltd. A high standard of lighting in daylight hours has been achieved by extensive use of glass brick and ample window space. As the mill works 24 hours a day artificial lighting has to be of high efficiency. Tungsten filament lighting has been used for general illumination and hot cathode fluorescent units are used for special or local lighting. Construction of the mill was supervised by Mr. T. Herzberg Frankel. Lighting was carried out by the General Electric Company Ltd.

SERVICES (lighting)

For the illustrations and text on which this section of the review of 1951 is based acknowledgments are made to the General Electric Company, Ltd., to British Thomson-Houston, Ltd., and to Thorn Electrical Industries, Ltd. (Part of the latter company's new showroom is illustrated on page 123). The purpose of this article is to bring together for comparison a few of the numerous types of systems which can be adopted in industrial lighting. Every building must, of course, be considered separately and no one system can be taken as applicable to any given type of building.

Broadly speaking, the methods of lighting, artificially, industrial buildings may be classified as follows:—

1 By individual tungsten fittings.
2 By individual fluorescent fittings.
3 By continuous fluorescent fittings.
4 By combined fluorescent and tungsten installations.

In most cases of factory lighting the stress must be on the quality and value of the light itself rather than on the appearance of the fittings. Quite apart from aesthetic considerations, however, the choice of any given fitting for a job requires careful thought since lighting efficiency can be marred by untidy installations or by the choice of unsuitable fittings. For instance, in high buildings where the light source for one reason or another is in the ceiling consideration must be given to economy of maintenance. Dust collecting on reflectors or on lamps, corrosion and the danger of broken glass falling from a height are all factors which will influence the specification.

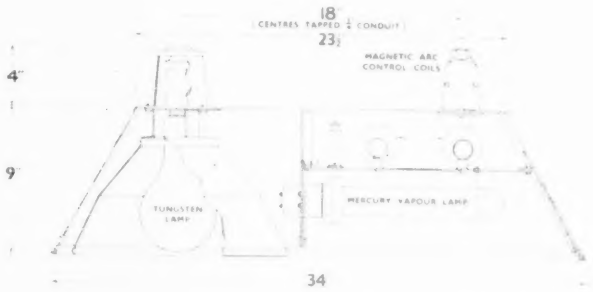
In this article some individual fittings are described and their use in buildings completed during 1951 is illustrated.

On the subject of modern lighting installation for industry Mr. L. H. Hubble, F.I.E.S., recently wrote as follows:—

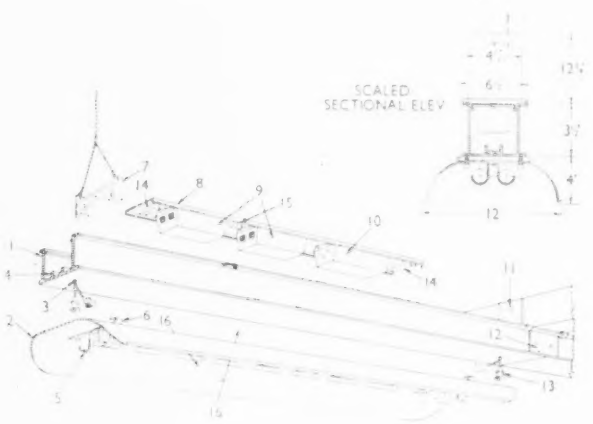
"The increasing magnitude of precision machinery has necessitated the special development of lighting equipment for large buildings and even in the older heavy industries a high degree of mechanization and precision work has gradually been introduced calling for much higher standards of lighting than are at present to be found in most of these factories.

"During the war much was done to improve the standards of illumination in the lighter industries, but in the heavy industries lighting did not seem to receive the same stimulus."

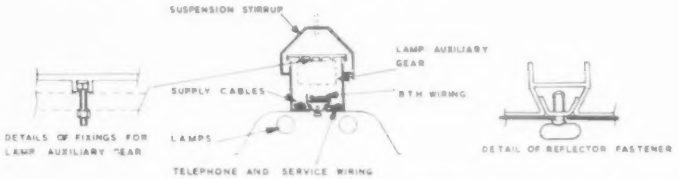
The important thing is that a measure

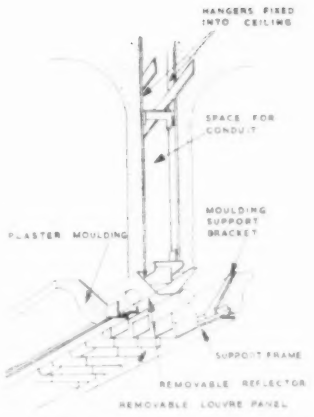


A combined mercury vapour and tungsten fitting. The application of similar fittings to a large industrial scheme is shown on page 124.



The drawing above shows the component parts of a lighting trunking system. 1. Extruded aluminium trunking. 2. Sheet steel reflector. 3. Hole for lampholder leads drilled on site. 4. Wiring runs. 5. Lamp support. 6. Reflector supporting strap (slides on to trunking). 7. Suspension bracket (wire or rod suspension). 8. Control gear tray. 9. Combined choke and instant start units. 10. Capacitor. 11. Fishplate for attaching trunking to beams. 12. Fishplate for joining lengths of trunking. 13. B.C. lampholders (Home Office shielded pattern). 14. Four-way terminal blocks. 15. Two-way terminal block. 16. Slots for upward illumination. *See page 124.*





Above : an alternative system of trunk lighting to that shown on page 122. Note that within reasonable limits this system enables other services to be neatly carried. In the case illustrated telephone wires are carried in the trunking.

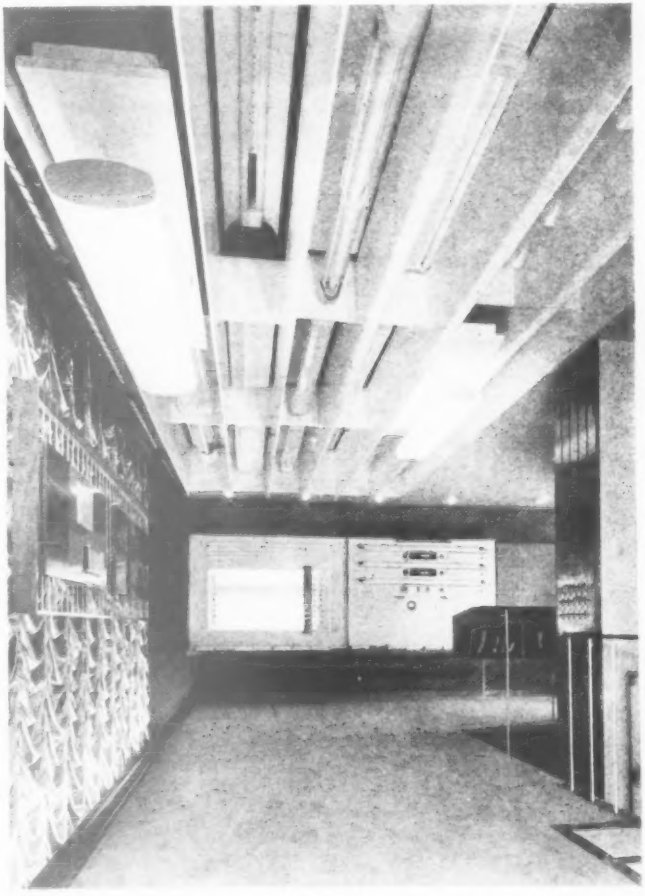
Right : a method of dealing with fluorescent lighting which possibly is the forerunner of future practice. The trend to incorporate the light source in the structure or to mask it with overall louvring, which in itself forms a ceiling, is on the increase. The latter method has been used at the new showrooms illustrated on this page.

Below : a detail showing the construction of a typical corrosion proof fitting. A photograph of this unit is on page 125.

of co-operation has now been achieved between architect, manufacturer and client, and from this point progress can continue.

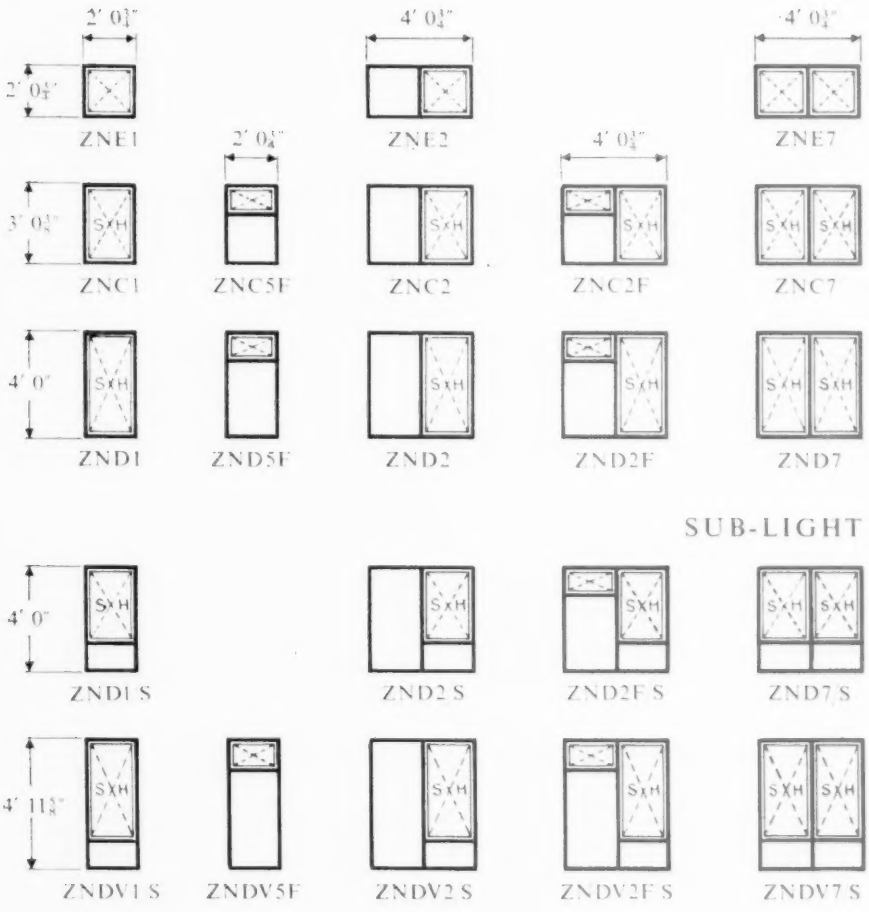
That the architectural approach is appreciated is demonstrated by the design for the new showrooms illustrated on this page. These showrooms succeed æsthetically and practically in being a real information centre on the application of fluorescent lighting. Amongst the well-displayed exhibits one seems to be of particular importance in view of the resistance there has been in the past to fluorescent on account of its effect on colour. In this display a number of different colours can be inspected. On one side of the cabinet the lighting is tungsten, on the other (and visible side by side with the tungsten) the lighting is fluorescent, from different shades of tube —white, warm white, etc.

The possibilities for lighting now that tungsten and fluorescent are both available are enormous. The longer life now obtainable from fluorescent tubes is an advance of great importance from the point of view of economy in maintenance. There is room for improvement—in fact, the scope in the sphere of lighting is probably as great if not greater than in any other aspect of building technique, and provides the architect with an opportunity for practical ingenuity in incorporating—not adding—the lighting in any given building.



For the new showrooms of Thorn Electrical Industries, Ltd., at 233 Shaftesbury Avenue the architects—Bronek Katz & Vaughan—have designed the grid shown in this picture. At the push of a button individual fittings are lowered for inspection. This system of demonstration avoids the confusion generally caused by a mass of fittings all seen together.

HOPE'S 'Z'



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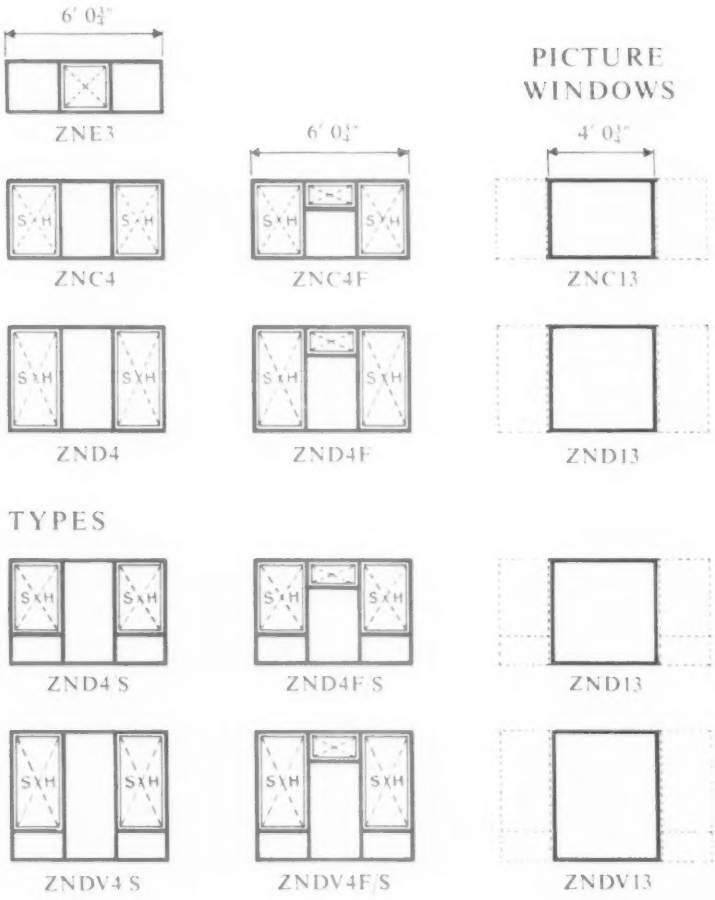

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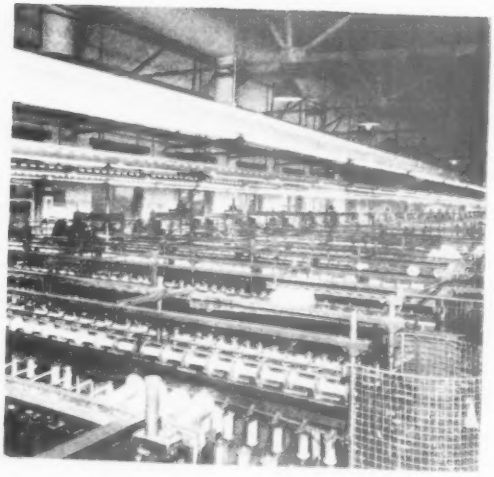

FOUR INDUSTRIAL LIGHTING INSTALLATIONS OF 1951

Above are four installations completed in the past year. Top left is a tungsten installation for the Northern Aluminium Company at Rogerstone. The fittings of the concentrating reflector type are mounted flush with the underside of the roof trusses. The majority of lamps are 750 watts. Where extra light is needed for special purposes the strength is increased to 1,000 watts.

Top right is part of the installation in the rolling mills of the Steel Company of Wales at Margam. This is a combined tungsten-mercury vapour scheme for which the individual fittings were specially designed. The required blend of light output was achieved by using, in each fitting, one 1,000-watt tungsten filament lamp and two 400-watt mercury vapour lamps, the latter being operated horizontally with magnetic arc control. High efficiency and a low maintenance factor are claimed for this fitting which has since been specified for a similar installation at Trostre.

The picture, lower left, shows some of the lighting at the new factory for Vauxhall Motors Ltd. at Luton. This scheme makes use of the universal trunking systems—see diagrams on page 122. In this case the trunking is provided in 20ft lengths and the lid, to which the control gear is secured, is cut into three sections. Two sections are two feet long and one is fifteen feet long. The two 2ft lengths have the gear attached and are located close to the suspension points on the roof trusses. The total floor area covered by this installation is 850,000 square feet involving 1,80e lengths of 20ft trunking.

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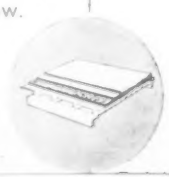

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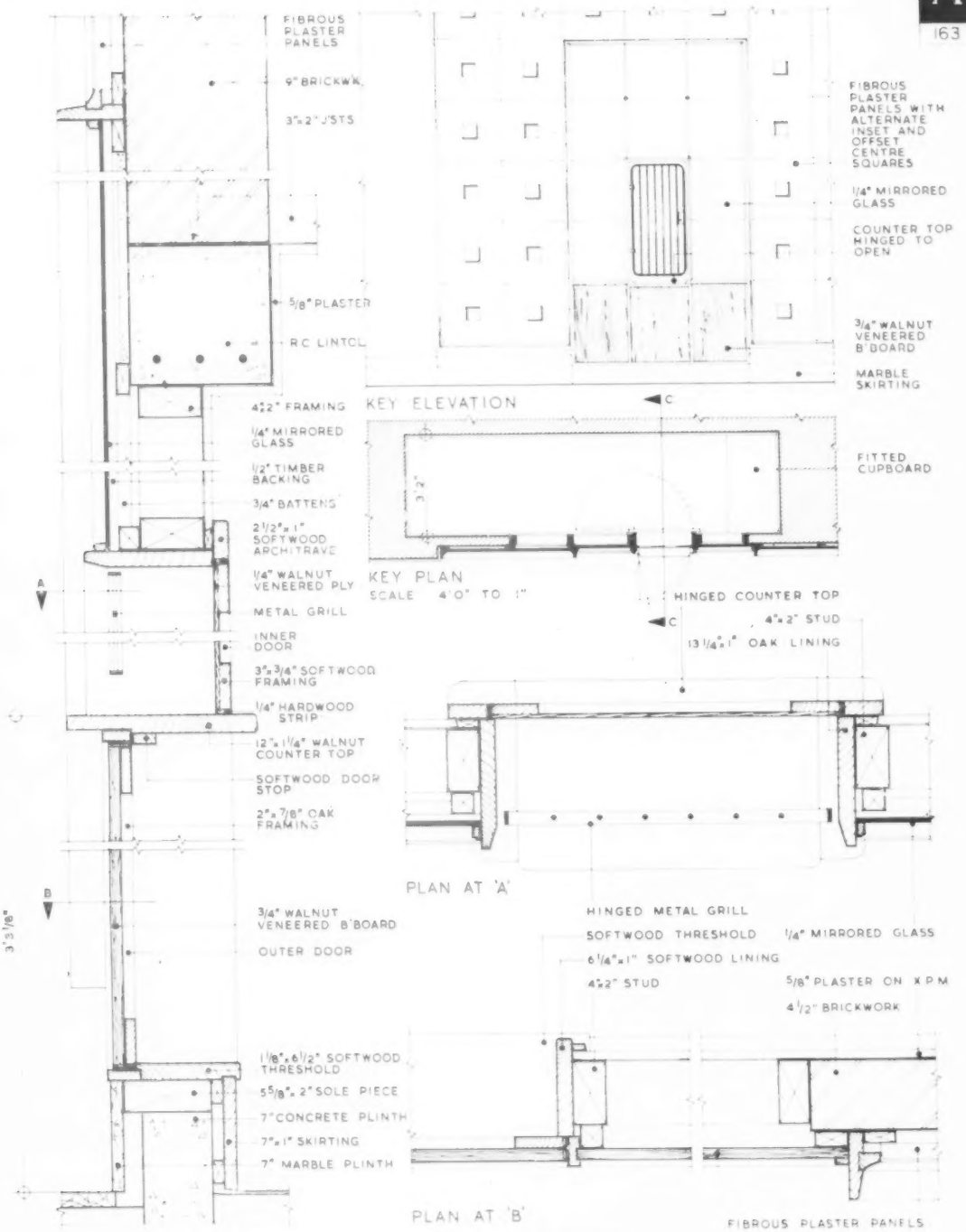
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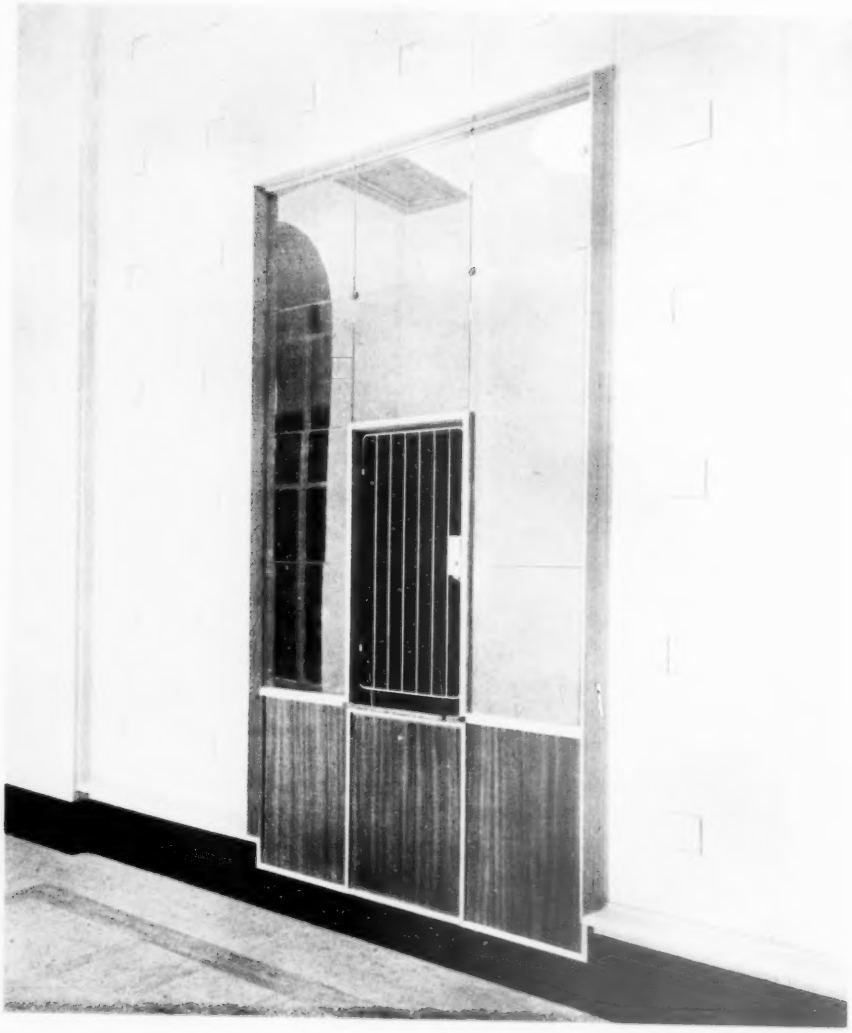
OUTER DOOR
3'3 1/8"
1 1/8"x 6 1/2" SOFTWOOD THRESHOLD
5 5/8"x 2" SOLE PIECE
7" CONCRETE PLINTH
7"x 1" SKIRTING
7" MARBLE PLINTH
SECTION AT 'C-C'
FIBROUS PLASTER PANELS WITH ALTERNATE INSET AND OFFSET CENTRE SQUARES
1/4" MIRRORED GLASS
COUNTER TOP HINGED TO OPEN
3/4" WALNUT VENEERED B'BOARD
MARBLE SKIRTING
KEY ELEVATION
C
3'2"
FITTED CUPBOARD
KEY PLAN
SCALE 4'0" TO 1"
HINGED COUNTER TOP
4"x 2" STUD
13 1/4"x 1" OAK LINING
PLAN AT 'A'
HINGED METAL GRILL
SOFTWOOD THRESHOLD
1/4" MIRRORED GLASS
6 1/4"x 1" SOFTWOOD LINING
4"x2" STUD
5/8" PLASTER ON X.P.M.
4 1/2" BRICKWORK
PLAN AT 'B'
SCALE 1'0" TO 1 1/2"
FIBROUS PLASTER PANELS
3/4" VENEERED B'BOARD



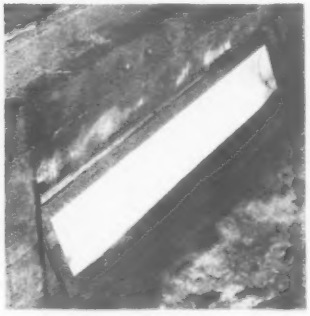
PAYBOX, MANCHESTER FREE TRADE HALL

ARCHITECT: LEONARD C. HOWITT

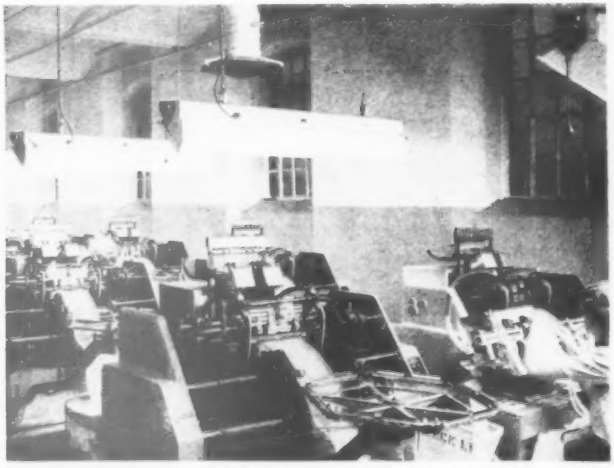
A recently produced fitting for high bay lighting which will take either mercury or tungsten lamps. For typical installation see picture right.

High bay lighting fittings of recently produced type are used in the Lackenby Steel Works (above). These fittings have been designed primarily for use with mercury lamps. In this case 1 Kw mercury lamps and 1,500 watt tungsten lamps are used in alternate fittings. Tunnel effect above the fittings is counteracted by upward light from the top of the fitting. See detail top left of this page.

For positions where corrosion is likely the anti-corrosion fitting above has been specially designed. For details of the construction see diagram on page 123.



Directional lighting is suitably provided for garage and locomotive pits or other positions where oil and dirt collect by this fitting in which the backward rake reduces the tendency for oil, water and dirt to drop onto the glass.



Directional lighting which eliminates shadows on intricate work is shown in this picture of the machines in a newly built hosiery works. One pendant fluorescent fitting is allocated to each machine in a position, and with specially designed casing, which together ensure maximum light on the work without glare for other operators. Note that each fitting is provided with its own pendant switch.

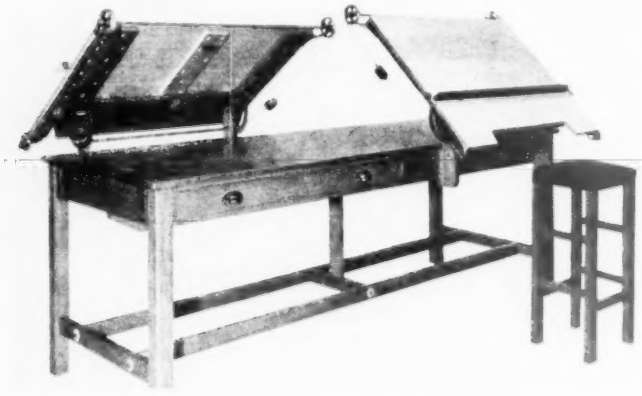
K

A combination of trunk lighting and individual ceiling pendants ensures even lighting from fluorescent lamps in this drawing office. Increasing attention to lighting in drawing offices is perhaps an indication that the days of the pendant tungsten fitting, brailled over the drawing board with pieces of string, are numbered.

DRAWING OFFICE EQUIPMENT

For much of the information on which this section is based acknowledgements are made to Messrs. Hall Harding, Ltd.

In one respect many people—not architects, of course!—would agree that 1951 might have produced greater evidence of progress. In view of the stress laid on pre-planning by the American productivity team report, published the previous year, it is surprising how little attention appears to be paid to the equipping of architect's offices.



One of the latest designs of architectural drawing office equipment is shown here. This twin board fitting is economical in floor space. Space is provided for reference drawings. The incorporated tee-square fitting has a transparent plastic edge with a moulded mahogany handpiece. The cut-away at the bottom edge of the board makes for comfort and enables maximum use to be made of the tee-square. The table itself is designed to facilitate cleaning round the legs. Single boards are also available in a model which provides table space behind the board so that when boards are placed one behind another each draughtsman has a reference space on the fitting of the draughtsman behind him.

In industry it is now accepted that efficient production can only result from efficiently laid out working places. Yet many architects' drawing offices are still reminiscent of the early part of the century.

The private practitioner (often, these days, struggling for his professional existence) may justifiably pause before laying out money on his own requirements. But it cannot be denied that until architects' drawing offices are properly equipped for modern conditions much time must be wasted in preparing the drawings which contractors are always crying out for. The photograph at the head of this page, and many examples throughout the country show that attention is being paid to improving lighting in some offices. But this is only one way in which production can be increased.

It is not suggested that time and motion technique should be introduced into professional drawing offices. Nevertheless, a rough check in some offices on the time wasted by using old instruments; by searching inadequate filing systems; by working in cramped and uncomfortable conditions where reference to other drawings than the one on the board entails unnecessary movement and so on would probably show that money invested in modern equipment would be repaid in time saved.

One of many examples of up-to-date office equipment is illustrated on this page. The shaped board makes for increased comfort, the incorporated tee-square with Perspex edge makes for increased accuracy and speed of drawing and the fitting itself, designed to provide spaces for reference drawings, enables any office to be planned compactly and with minimum movement for draughtsmen. In planning for efficiency the smallest things count. Lack of provision for ink or water colour in a position easily reached by the draughtsman can account for hours wasted over a period of a few months.

Advances are, however, being made by manufacturers in the field of drawing-office equipment and this term may be extended to include printing machines.

A growing number of authorities are doing their own printing of drawings and further developments in the design of printing machinery may confidently be expected in the near future.

In this respect it is worth noting that the raw materials situation is likely to affect delivery. It has been pointed out, however, by one manufacturer that this need not adversely affect authorities who are considering adopting or increasing their own printing facilities. Delay in delivery in the past has frequently been caused as much by the client's inability to place orders in advance of requirements as by the actual shortage of material. It should be remembered that many of these machines are made to definite order and cannot be supplied from stock.

Points to look for in selecting suitable machines for general office work include adaptability to the greatest possible number of drawing sizes; safety and cleanliness in the use of acid; rapid warming up; and even coverage of the negative by the light sources.

It is not easy for architects to find time to overhaul their office equipment but in view of developments in furnishing and in types of drawing instrument which have taken place lately and which are still in the experimental stage it is suggested that check ups in many offices, combined with a reasonable financial outlay, might do much to assist in the more efficient pre-planning of work.

F I N I S H E S

The cost of paint is a relatively small proportion—¼ to ½—of the cost of application. The importance of paint as a preservative is probably greater to-day than ever in view of the necessity to maintain existing buildings, thereby freeing labour and materials for new and essential work.

Economy in painting is therefore best achieved by specifying reliable materials and, if possible, by reducing the time spent on initial painting and the frequency of repainting. This must not be taken as meaning that preparation of surfaces can be skimped or repainting delayed beyond the natural limit of the material in time. It does, however, draw attention to the fact that manufacturers themselves are constantly carrying out research to produce paints which cover easily and quickly, which have long life and resistance to wear and, in some cases (though these should be carefully examined) which reduce the amount of preparation needed on surfaces such as plaster.

Since industry is to have a prior claim on building in the coming year, interest attaches to the use of paint for machinery. In recent years considerable research has been carried out in relation to the use of colour on machinery. One of the best recent examples of the results of that research is the Needle Industries, Ltd., factory at Studley, Worcestershire, where synthetic resin paints were used and which last year was awarded the R.I.B.A. bronze medal. The architects were S. N. Cooke and Partners.

In such buildings repainting or maintenance caused by insufficient care in selecting the original protection must interrupt production. Specifications should therefore take into consideration at least the following factors: long life, toughness and resistance to impact, resistance to corrosion in different types of atmosphere, fastness to light, and quick-drying properties.

New finishes for machinery which comes in contact with alkaline materials are based on Epoxy resin. These are not yet available in large quantities in this country. Synthetic resin paints have the advantage of being easily sprayed on with resultant saving in labour costs.

A development which has made considerable progress over the past year is plastic emulsion paint.

These paints represent a new departure in the decorative field. It is not suggested that they will revolutionize the paint industry, but their advantages are rapidly becoming recognized, chiefly for use in wall decoration.

Plastic emulsion paints are based on emulsified Polyvinyl Acetate. Technically they are water paints and are completely oil free, but can be plasticized to give dry films possessing a remarkable degree of flexibility which are not subject to embrittlement on ageing. Moreover the dry film attains insolubility so quickly that the paint may be recoated in a matter of hours instead of requiring an ageing period of several weeks before it becomes washable; plastic emulsion paints may be washed within a matter of days. The short recoating time is of importance where speed in completing a job is essential.

Another advantage is absence of odour an hour or two after application. Owing to the fact that the binder in this class of material is oil free and unaffected by alkali, it is claimed that the material can be applied to freshly plastered walls without running the risk of destruction of the film by saponification from alkalies in the plaster.

By correct formulation, it is possible to produce paints of excellent brushability, and possessing working qualities in no way inferior to the recognized materials for treatment of walls. As the speed of drying depends mainly on the evaporation of the water content, the rate will naturally be affected by the temperature and humidity of the surrounding air, and it follows from this that greater difficulty in maintaining a wet edge will be experienced in hot, dry weather.

A further advantage of these plastic emulsion paints is that they may be formulated for exterior purposes. Since the binder is oil free and not subject to oxidation it is highly resistant to the destructive forces of the elements, and paints in pale tints are not subject to development of chalking which is normally experienced in these shades. Remarkable durability has been observed in exposed sites practically on the seashore. As stated at the beginning, these materials are still very new and as experience is gained further improvements will undoubtedly be made to still further enhance their performance.

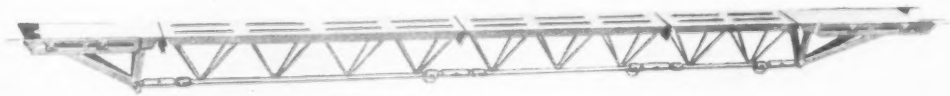
The anti-condensation properties of these materials are outstanding, for, whereas the normal paint surfaces produce the "channelling" effect, and leave lines on the walls, these paints are not prone to this defect, and although moisture does condense no markings are apparent when the walls have dried off.

Plastic emulsion paints have been used as a sealer over bitumen and then painted over without the usual "bleeding" effect.

Recent developments have resulted in considerable improvement in adhesion to old paint surfaces, even glossy ones, where suitably prepared. It has as yet not been possible to obtain good adhesion to smooth or bright metal surfaces.

Some experience is necessary in the application of these paints to obtain the best results, and providing manufacturers' instructions are followed, finishes flow out easily leaving few visible brush marks.

Acknowledgements are made to the following firms for material supplied for these notes: Cellon, Ltd.; Charles Turner and Son, Ltd.



P L A N T

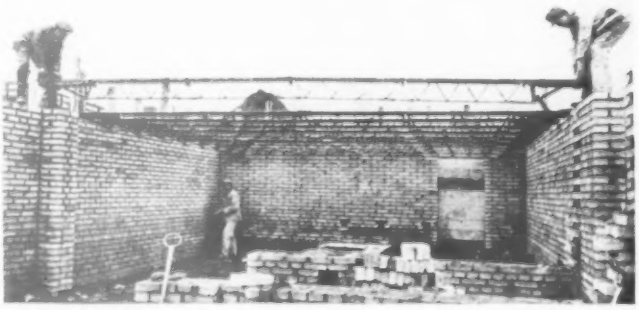
At nearly every exhibition in 1951 there was some new development in mechanization to be seen. One which bids fair to make for speedier building in future is mentioned here.

The pictures on this page show the basic unit of "Hico" shuttering; a system of falsework introduced to this county by Blaw Knox, Ltd., towards the end of last year.

Each unit is made up of section of lattice girder—light in weight and easily connected up to form the complete girder illustrated. These girders will span up to 28ft 1in without intermediate support.

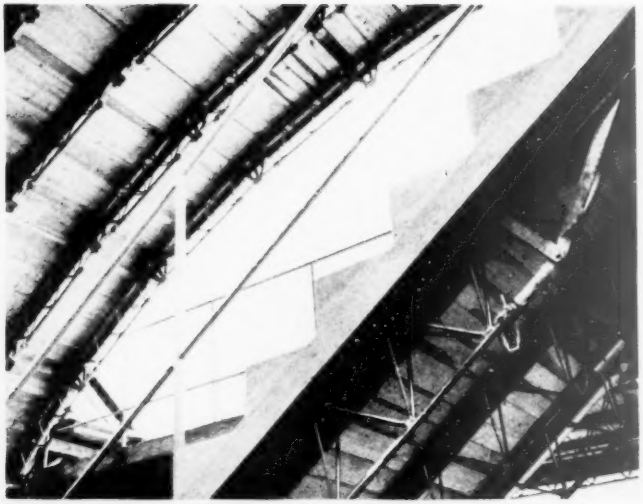
In this way slab work for floors can be carried out without placing any additional load on newly placed floors below. Moreover, the floor below is left clear of obstruction by props, thus enabling other trades to continue working without interference.

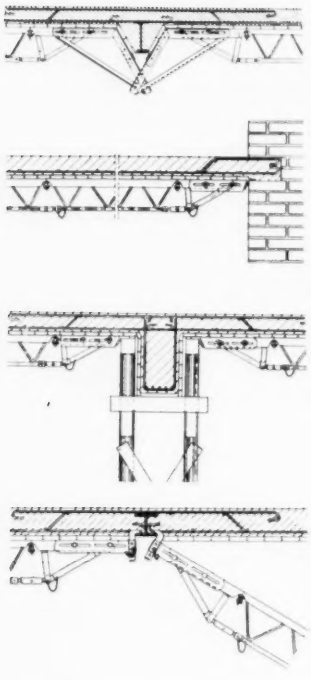
Finished floors can be levelled with extreme accuracy after laying by the simple expedient of turning the connecting turnbuckles in the lower member of each girder.



The upper illustration shows a complete "Hico" centre unit fitted with end pieces for resting on solid walling. Alternative end pieces for steel construction are shown overleaf.

The lower picture shows a 14ft unit weighing 1 cwt being walked into position by two men. Note the clear working area provided beneath the centring which transmits all loads to the bearing walls.





The four diagrams above show alternative designs of end member to suit different systems of construction.

Note the special end bearing claws in the bottom diagram for applications where the girder is contained in the ceiling depth. These claws are removed from the concrete ceiling by breaking the main unit at one joint and dropping the section down and out.

This shuttering has many possible applications as shown in the accompanying photographs. It may be used for curved work in roofs; for raked work on staircases or ramps and for vertical work. Bearing members, or end pieces, are constructed in alternative ways to suit different types of construction, as shown in the diagrams, left.

This system has been tested for load bearing and, according to the test certificate, the permissible bending moment of the "Hico" centering is 38.8 ton-inches. A table showing free spans and centre spacings is provided by the marketing company. Examples taken from this table are as follow:—

Where the weight of ceiling including shuttering is 28.7lb per sq ft the permissible span is 25ft 9in where centres are spaced at 19.7in, decreasing to a span of 14ft 6in where the centre spacing is increased to 59in.

With a floor weight, including shuttering, of 102.5lb per sq ft, the permissible free span is 17ft 6in with a centre spacing of 19.7in, reducing to 6ft 6in if centres are spaced at 59in.

The free spans and centre spacings quoted in the table must not be exceeded. If the clear width of the room is up to 25 per cent greater than the permissible free span, it is sufficient to support the junctions at the end of a centre piece with a scantling, in the middle of the centre. If the free span is exceeded by up to 50 per cent, then in a set of two centre pieces, the end junctions of both pieces must be supported with a double prop. In this manner it is possible to deal economically with a ceiling having a span of 26ft 2in. Centre pieces should not be propped at points other than the end junctions, as the "Hico" centre must not be regarded as a through centre on more than two props.

It will be seen that for a given length of flooring a number of units—jointed on the ground to the required length—can be hoisted by crane, and then easily and quickly walked into position at the determined centres by one man at each end.

There are no loose parts to be lost. Each unit is complete with its own connections. Dismantling after the floor slab has set is simple and quick. The turnbuckles are provided with a swivel joint which enables the buckle to be pulled downward.

These units weigh twenty-five pounds per yard run. It is claimed that two men can erect this falsework over an area of 1,000 sq ft in less than 40 minutes. The units have a high re-use value.

In the picture, top left, two applications of "Hico" are shown as falsework for the curved roof and as support for the shuttering beneath a concrete stair.

It is understood that experiments are being carried out to provide ready-made "firring" pieces for curved work which would further simplify erection.

In the photograph above the centring is used as soldiering in vertical work. This photograph was taken abroad. Metal horizontal bracings are being designed for use in this country.

CONTRACT • NEWS •

Notes below give basic date of contracts open under locality and authority which are in bold type. References indicate: (a) type of work, (b) address for application. Where no town is stated in the address it is the same as the locality given in the heading. (c) deposit, (d) last date for application, (e) last date and time for submission of tenders. Full details of contracts marked ★ are given in the advertisement section.

OPEN

BUILDING

BILSTON B.C. (a) (Contract No. 172) 12 houses for Bradley redevelopment, (Contract No. 173) 26 for central redevelopment and (Contract No. 174) 100 houses at Bradley Lane (North). (b) Borough Architect, 20, Wellington Road. (c) 2gns each contract.

* * *

BIRMINGHAM C.C. (a) Contract No. 225, 72 dwellings, Brandwood Park Road, Kings Heath. (b) City Engineer, Civic Centre. (c) 2gns. (d) Jan. 28.

* * *

BLACKBURN B.C. (a) (1) Secondary school at Witton Park, and (2) extensions to Longshaw Primary Junior School. (b) Borough Engineer, Town Hall. (c) 2gns each contract. (d) Jan. 31.

* * *

BOLTON B.C. (a) 42 houses, Johnson Fold Estate. (b) Housing Director, Town Hall. (c) 2gns. (e) Feb. 18.

* * *

BRIGHTON B.C. (a) Secondary school at Varndean. (b) Borough Engineer, 26-30, King's Road. (c) 3gns. (e) Feb. 12.

* * *

BURGESS HILL U.C. (a) 18 houses and 6 flats and incidental works at St. Andrew's Road. (b) Engineer and Surveyor, Council Offices, 32, Church Road. (c) £2. (e) Feb. 7.

* * *

CHELMSFORD R.C. (a) 42 dwellings and roadworks, etc., South Hanningfield. (b) Estates Manager (Room 26), Council Offices, New London Road. (c) £2. (e) Feb. 11.

* * *

CREDITON U.C. (a) 24 houses (or a proportion thereof) at Spruce Park. (b) Messrs. F. W. Beech and E. Curnow Cooke, 15, Dix's Field, Exeter. (c) 2gns. (e) Feb. 25.

* * *

CROYDON B.C. (a) Laboratories and classrooms at Lady Edridge Grammar School, Clifton Road. (b) Chief Education Officer, Katherine Street. (c) £1. (e) Feb. 1.

* * *

DAGENHAM B.C. (a) 8 flats in 2 blocks, Wantz Corner, Rainham Road North. (b) Borough Engineer, Civic Centre. (c) 2gns. (e) Feb. 11

* * *

DAGENHAM B.C. (a) 42 flats in 3 blocks, Dagenham Road. (b) Borough Engineer, Civic Centre. (c) 2gns. (e) Feb. 11

* * *

DEAL B.C. (a) 36 flats, Orchard Avenue Estate. (b) Borough Engineer, Municipal Offices, Queen Street. (c) 2gns. (e) Feb. 12.

* * *

EASTBOURNE B.C. (a) 78 houses, Langney Village Estate (Section 1). (b) Borough Surveyor, 2, Saffrons Road. (c) 2gns. (d) Feb. 6. (e) March 7.

* * *

ESHER U.C. (a) (Contract No. 102) 12 flats and (Contract No. 107) 22 houses, Slough Farm Estate. (b) Engineer and Surveyor, Council Offices. (c) 1gn each contract. (e) Feb. 22.

ESHER U.C. (a) (Contract No. 121) 24 maisonettes and 8 houses, (Contract No. 122) 6 old persons' bungalows and (Contract No. 123) 26 houses, Winston Drive Estate, Stoke D'Abernon. (b) Engineer and Surveyor, Council Offices. (c) 1gn each contract. (e) Feb. 22.

* * *

ESTON U.C. (a) (Contract No. 1) 10 houses, (Contract No. 2) 16 houses, (Contract No. 3) 18 houses, (Contract No. 4) 20 houses and (Contract No. 5) 70 houses, Redcar Road East Estate, South Bank. (b) Engineer and Surveyor, Normanby Road, South Bank, Middlesbrough. (c) 1gn each contract. (e) Feb. 6.

* * *

LEEK U.C. (a) (Contract No. 4) 28 houses, Haregate Estate. (b) Mr. John A. Gilchrist, Town Hall. (c) 5gns. (e) Feb. 2.

* * *

LEXDEN AND WINSTREE R.C. (a) (1) 2 blocks of 4 flats and extension of road and sewer at Dedham and (2) 1 block of 4 flats and 1 pair of houses at Boxted. (b) Messrs. Duncan Clark and Beckett, 7, West Stockwell Street, Colchester. (c) 2gns each site. (d) Jan. 26.

* * *

LIVERPOOL C.C. (a) Junior school at Speke, for the Roman Catholic Authorities. (b) Messrs. J. C. Prestwich and Sons, Bradshawgate Chambers, Leigh. (c) 3gns by cheque, payable to Rev. J. McCarthy. (d) Jan. 31.

* * *

LLANDOVERY B.C. (a) 12 houses with roads and sewers at Caefelincaeau. (b) Messrs. Thomas and Morgan and Partners, 23, Gelliwasted Road, Pontypridd. (c) 3gns. (e) Feb. 26.

* * *

LONDON—DEPTFORD B.C. (a) Public cleansing station at Speedwell Street, S.E.8, and supply and installation of services and equipment. (b) Borough Engineer, Town Hall, New Cross, S.E.14. (c) 2gns. (e) Feb. 18.

* * *

LONDON—WANDSWORTH B.C. (a) 12 flats, Baldry Gardens, Streatham, S.W.16. (b) Town Clerk, Municipal Buildings, S.W.18 (with details of experience, plant, technical and supervisory staff available and names of two technical and two financial referees). (d) Jan. 30.

* * *

LONDON—WEST HAM B.C. (a) 14 maisonettes, East Road, E.15. (b) Borough Architect, 70, West Ham Lane, Stratford, E.15. (c) 2gns. (d) Feb. 1.

* * *

LOTHINGLAND R.C. (a) (1) 8 houses at Borrow Close, Carlton Colville, (2) 6 houses at Church Street, Wangford, and (3) 4 houses at Bonsey Gardens, Wrentham. (b) Council's Clerk, Council Offices, Rectory Road, Lowestoft. (c) 2gns. (d) Jan. 30. (e) Feb. 25.

* * *

MERIDEN R.C. (a) 52 houses, Nuneaton Road, Arley. (b) Engineer and Surveyor, The Old Vicarage, Coleshill, nr. Birmingham. (c) 2gns. (e) Feb. 8.

* * *

N. IRELAND—CUSHENDALL (CO. ANTRIM). (a) Schools at Cushendall (for Very Rev. P. J. Black). (b) W. H. M'Evoy, Ulster Bank Chambers, 73, May Street, Belfast. (c) 3gns. (e) Feb. 4.

* * *

N. IRELAND — NORTHERN IRELAND TUBERCULOSIS AUTHORITY. (a) Electrical sub-station building Whiteabbey Hospital, Co. Antrim. (b) Messrs. Gibson and Taylor, 16, Donegall Square South, Belfast. (c) 2gns to Secretary, 27, Adelaide Street, Belfast.

NORTHAMPTON B.C. (a) 72 houses, Cherry Orchard Farm, Weston Favell (three contracts of 22, 22 and 28 houses). (b) Borough Architect, Guildhall, stating contract or contracts. (c) 2gns. (d) Jan. 28. (e) Feb. 18.

* * *

NORWICH C.C. (a) 4 houses, Silver Road, 8 houses, Boston Street, 4 pairs of flats at Marl Pit Lane and 2 pairs of flats at Lothian Street. (b) City Architect's Office, City Hall. (c) £1. (e) Feb. 4.

* * *

RIPON AND PATELEY BRIDGE R.C. (a) 30 houses and site development works at Summerbridge (all trades). (b) Mr. J. C. Kenyon, Council Offices, Pateley Bridge. (e) Feb. 2.

* * *

SAFFRON WALDEN R.C. (a) 10 houses at Clavering, 4 houses at Elmdon, 4 houses at Hadstock. (b) Council's Clerk, Council Offices, Debden Road. (e) Feb. 2.

* * *

SHREWSBURY B.C. (a) Blocks of 6 shops and maisonettes, each on the Oakfield, Springfield and Crowmoor Estates. (b) Borough Surveyor, Guildhall. (c) 2gns. (e) Feb. 25.

* * *

SMETHWICK B.C. (a) School kitchen. (b) Borough Engineer, Council House. (c) 2gns, by crossed cheque, payable to "Borough Treasurer, Smethwick." (e) Feb. 9.

* * *

SOUTH SHIELDS B.C. (a) 5-storey block of flats, Lawe Road. (b) Borough Engineer, Town Hall. (c) 2gns. (e) Feb. 11.

* * *

STALYBRIDGE, HYDE, MOSSLEY AND DUKINFIELD TRANSPORT AND ELECTRICITY BOARD. (a) (Contract No. 1) General building contract and site works, and (Contract No. 2) structural steelwork, for erection of bus garage, workshops and offices in Lodge Lane, Dukinfield. (b) Messrs. Howard and Benson, 88, Mosley Street, Manchester, 2. (c) 2gns each contract. (e) Feb. 11.

* * *

WEST RIDING C.C. (a) Hall and 3-storey block at Ilkley College of Housecraft, Wells Road, Ilkley. (b) County Architect, "Bishopgarth," Westfield Road, Wakefield. (c) 2gns. (e) Feb. 18.

* * *

WITHAM U.C. (a) 18 houses, Maldon Road Development, Howbridge Area. (b) Mr. Stanley Bragg, 16, London Road, Chelmsford. (c) 2gns. (e) Feb. 5.

PLACED

Notes on contracts placed state locality and authority in bold type with (1) type of work, (2) site, (3) name of contractor and address, (4) amount of tender or estimate. † denotes that work may not start pending final acceptance, or obtaining of licence, or modification of tenders, etc.

BUILDING

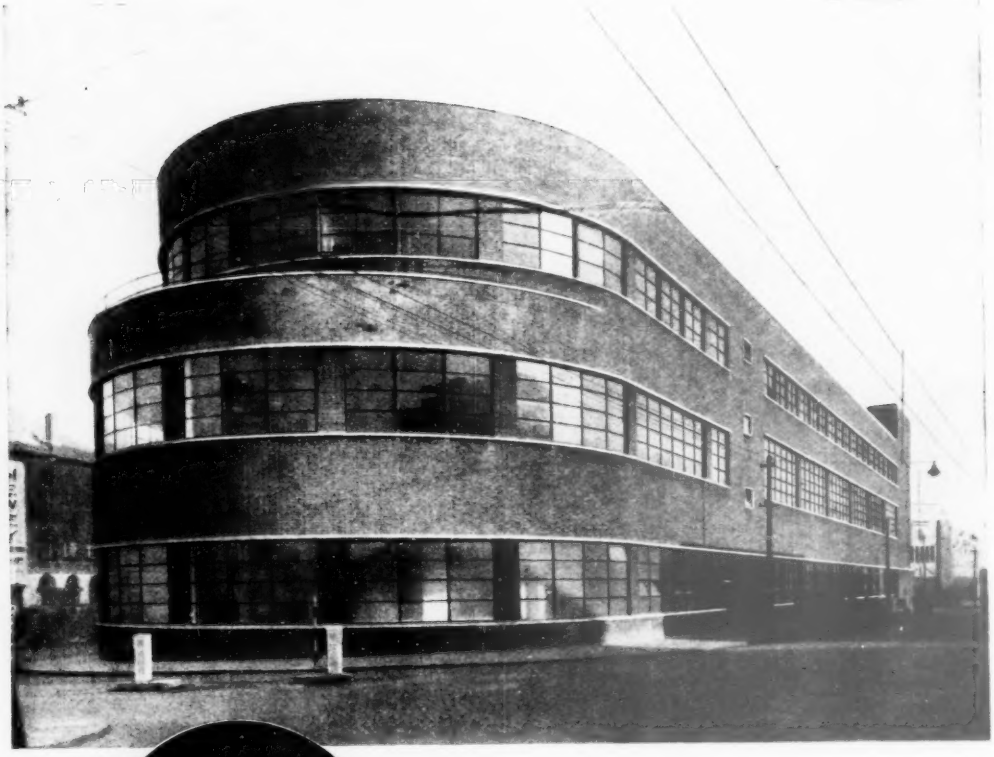
EAST HAM B.C. (1) 8-storey secondary school. (2) Plashet Grove. (3) Bernard Sunley and Sons, Ltd., 34, St. James's Street, S.W.1. (4) £264,982.

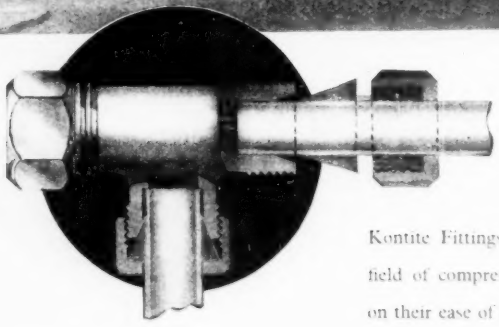
* * *

NOTTINGHAM CORPORATION. (1) Section A of Technical College. (3) F. G. Minter, Ltd., 4, Buckingham Gate, London, S.W.1. (4) £631,557.

* * *

GLASGOW CORPORATION. (1) Brick and mason work for secondary school. (2) Balornock. (3) Angus McDougall and Co., Ltd., 24, Davaar Street, Glasgow. (4) £162,179.





Our illustration shows the recently erected G.P.O. Sorting Office at Nottingham which was installed throughout with Kontite Compression Fittings.

Kontite Fittings have long maintained a leading place in the field of compression jointings. Their popularity is founded on their ease of assembly, their adaptability and the reliability which is ensured by the use of the highest grade materials in the hands of fine British craftsmen.

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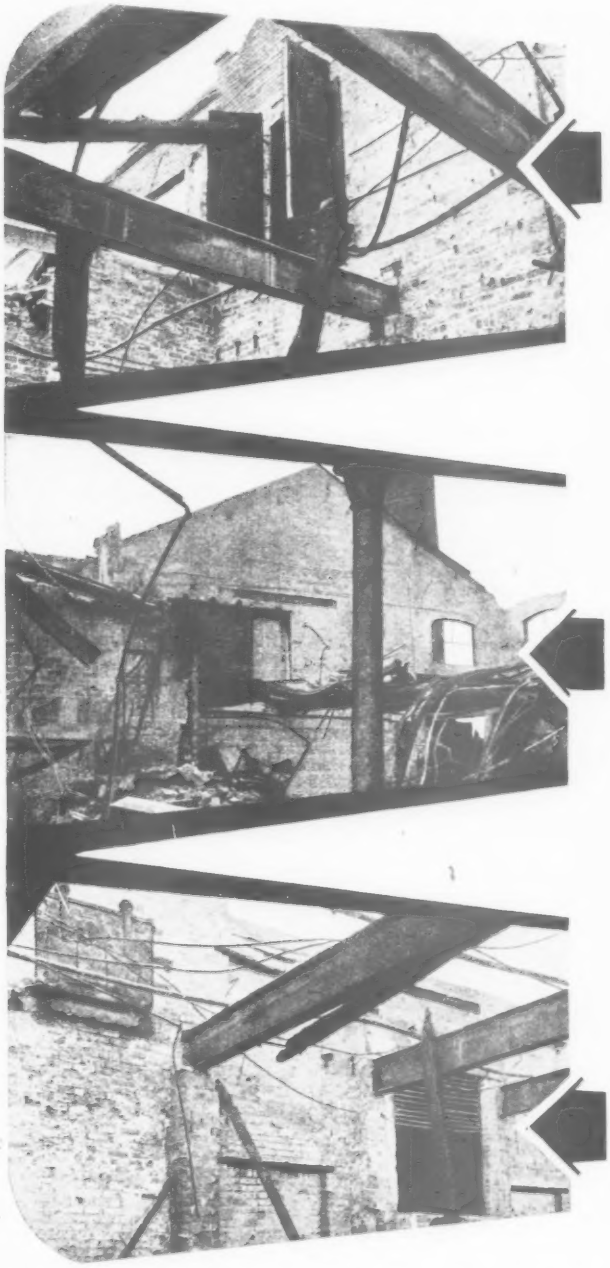

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On the night of March 24th, 1950, Mather & Platt Fire Doors checked the spread of fire at premises occupied jointly by a firm of raincoat manufacturers and a firm of food manufacturers. The installation of Fire Doors and one Steel Rolling Shutter built to F.O.C. requirements had been completed only three months previously.

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OFFICIAL ANNOUNCEMENTS

APPOINTMENTS • CONTRACTS • TENDERS

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APPOINTMENTS

COUNTY BOROUGH OF GRIMSBY.

BOROUGH ENGINEER & SURVEYOR'S DEPARTMENT.

SENIOR ARCHITECTURAL ASSISTANT.

APPLICATIONS are invited for the appointment of a SENIOR ARCHITECTURAL ASSISTANT in the Architects Section of the above Department in accordance with the conditions of service and scale of salary of the National Joint Council for A.P.T. Grade VII (£685—£25—£760 per annum).

The appointment is terminable by one month's notice on either side and is subject to the provisions of the Local Government Superannuation Act, 1937. The successful candidate will be required to pass a medical examination.

HOUSING ACCOMMODATION WILL BE AVAILABLE FOR THE SUCCESSFUL CANDIDATE IF MARRIED.

Applications stating age, qualifications and details of experience, together with copies of two recent testimonials, must be suitably endorsed and delivered to the undersigned not later than first post on Saturday, 2nd February, 1952.

J. V. OLDFIELD,
Borough Engineer & Surveyor.

Municipal Offices,
Town Hall Square,
GRIMSBY.
January, 1952. [6098

MALVERN URBAN DISTRICT COUNCIL.

QUANTITY SURVEYING ASSISTANT.

APPLICATIONS are invited for the appointment of a QUANTITY SURVEYING ASSISTANT in the department of the Surveyor and Water Engineer at a salary in accordance with Grades VI or VII of the A.P. & T. Division of the National Scales (£645—£710 or £685—£760 per annum) according to qualifications and experience.

Candidates must have passed the Final Examination of the Royal Institution of Chartered Surveyors (Quantities Division) and must have had extensive experience in the preparation of Bills of Quantities, Estimates, Measurement of Site Works, Interim Certificates, Final Accounts, etc.

Housing accommodation for a married man will be available if required.

The appointment will be subject to the provisions of the Local Government Superannuation Act, 1937, and to the National Joint Council Scheme of Conditions of Service.

Applications, stating age, qualifications and experience, together with the names of two persons to whom reference can be made, must be delivered to the undersigned not later than 28th JANUARY, 1952.

J. BULMAN,
Clerk of the Council.

The Council House,
Malvern.
4th January, 1952. [6112

CITY AND COUNTY OF KINGSTON UPON HULL.

APPOINTMENT OF SENIOR ASSISTANT ARCHITECT.

APPLICATIONS are invited for the appointment of a SENIOR ASSISTANT ARCHITECT in Grade VIII, A.P.T. Division, £760-£810 per annum. Applicants should have a sound experience in architectural work as usually carried out by a Local Authority. They should be capable of controlling a small section of the staff and of supervising the erection of buildings under contract. They should also possess some administrative ability and experience.

The appointment will be subject to one month's notice on either side, to the National Scheme of Conditions of Service and to the Local Government Superannuation Act, 1937.

Application forms, to be obtained from the undersigned, should be returned complete on or before 1st February, 1952.

ANDREW RANKINE, A.R.I.B.A.,
City Architect.

Guildhall, Kingston upon Hull. [6122

APPOINTMENTS—contd.

EDINBURGH CORPORATION.

SENIOR DEPUTE CITY ARCHITECT.

THE office of City Architect will become vacant in October, 1953. The Corporation invite applications for the appointment now of SENIOR DEPUTE CITY ARCHITECT, salary, approx. £1,750 p.a. Qualifications: A.R.I.B.A., administrative experience.

Six copies of applications and relevant documents (with names of at least two referees) to be lodged with the subscriber not later than 11th February, 1952.

J. STORRAR,
Town Clerk.

City Chambers,
EDINBURGH. 3rd January, 1952. [6060

COUNTY BOROUGH OF EAST HAM.

BOROUGH ENGINEER'S DEPARTMENT.

APPLICATIONS are invited for the undermentioned appointments on the permanent staff:—

SENIOR ARCHITECTURAL ASSISTANT, Grade A.P.T.VI (two vacancies). Salary £645-£710 per annum.

ARCHITECTURAL ASSISTANT. Grade A.P.T.IV. Salary £530-£575 per annum.

SENIOR ENGINEERING ASSISTANT, Grade A.P.T.VI. Salary £645-£710 per annum.

ENGINEERING ASSISTANT, Grade A.P.T.V. (three vacancies). Salary £570-£620 per annum.

The appropriate London Weighting (£10 per annum to £30 per annum according to age) is paid in addition to the above salaries and salaries in excess of the minima of the grades may be paid according to the qualifications and experience of successful candidates.

The Council will be prepared to consider applications for a subsistence allowance in appropriate cases from persons appointed should they be unable to obtain suitable housing accommodation.

Full particulars of the terms and conditions of appointment and form of application (which must be returned by Monday, the 11th February, 1952) may be obtained from the undersigned. Candidates must state for which post they are applying.

Canvassing in any form will disqualify.

H. A. EDWARDS,
Town Clerk.

Town Hall,
East Ham, E.6. [6124

CITY AND COUNTY OF KINGSTON UPON HULL.

APPOINTMENT OF ASSISTANT ARCHITECT, GRADE VI, A.P.T. DIVISION, £645-£710 PER ANNUM.

APPLICATIONS are invited for this appointment from Architects preferably having experience in modern school design and construction. The appointment will be subject to one month's notice on either side, to the National Scheme of Conditions of Service and to the Local Government Superannuation Act, 1937.

Application forms, to be obtained from the undersigned, should be returned complete on or before 1st February, 1952.

ANDREW RANKINE, A.R.I.B.A.,
City Architect.

Guildhall, Kingston upon Hull. [6121

LONDON COUNTY COUNCIL.

APPLICATIONS invited for position of Senior Structural Engineer in Architect's Dept. Salary £1,275 x £75—£1,575. Qualifications: A.M.I.C.E. or A.M.I.Struct.E. essential. Further particulars and applications form (returnable by 29th February, 1952) from Architect, The County Hall, S.E.1, quoting AR/EK/SS/5 (67). [6123

EXAMINATIONS

I.A.A.S. FORTHCOMING EXAMINATIONS.

THE Incorporated Association of Architects and Surveyors will hold examinations at Intermediate and Final grades in following sections during the week beginning 19th May, 1952:—

ARCHITECTURE.
QUANTITY SURVEYORS.
BUILDING SURVEYORS—MUNICIPAL.
BUILDING SURVEYORS—NON-MUNICIPAL.
LAND SURVEYORS.
FIRE SURVEYORS.

The Examinations will be held in London, and at certain provincial centres. Applications from candidates for permission to sit, made on the prescribed form, must be received not later than Monday, 25th February, 1952.

Full information on application to the Examinations Secretary, I.A.A.S., 75, Eaton Place, S.W.1. [6106

ARCHITECTURAL ASSOCIATION School of Architecture. Entrance examination for admission September, 1952, will be held on 17th March. Last date for applications: 1st March.—Full particulars and application forms from Principal, 36, Bedford Sq., W.C.1. [6120

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ARCHITECTURAL Assistant required in West End Architects' Office, up to R.I.B.A. Intermediate Standard. Must have completed his Military Service.—Apply in writing, stating age, experience and salary required, to Box 6225. [6095

ARCHITECTURAL ASSISTANTS required with at least three or four years office experience, minimum standard R.I.B.A. Intermediate. Five day working week with pension scheme and staff canteen in operation. Applications in writing giving age, training and experience to:—Chief Staff Architect, Ilford Limited, Romford, Essex. [6114

MIDLAND Architect medium-sized office requires Senior and Inter. Standard Assistant Architects, having initiative, contemporary outlook, good draughtsmen willing to take responsibility; bonus scheme in operation. Salary in accordance with experience and ability. Housing. School, Industrial work in progress.—Full details, Box 6219. [6090

AN industrial architect is required by a large manufacturing company in the Midlands, to take responsibility for the development and supervision of building work. Applicants, who should be registered architects by examination, must have had experience in modern heavy industrial building design. Applications, stating age, experience, qualifications and salary required to—Box No. 956, T. & G., 101, St. Martin's Lane, W.C.2. [6115

IMPERIAL CHEMICAL INDUSTRIES, Ltd., General Chemicals Division, require one or two Assistant Architects in the Architectural Section of their Chief Engineer's Department, Runcorn. Applicants should have had good experience in design and the preparation of working drawings. Other factors being equal, preference will be given to those who have passed the final examination of the R.I.B.A. Salary dependent on age and experience. Membership of Pension Fund.—Apply in writing, quoting E.81, to Staff Manager, Imperial Chemical Industries, Ltd., General Chemicals Division, Cunard Building, Liverpool, 3. [6037

ARCHITECTURAL APPOINTMENTS VACANT—contd.

ARCHITECTURAL Assistant, Senior position, required immediately. Please write, stating details of experience and qualifications.—Martin & Martin & W. H. Ward, 106, Colmore Row, Birmingham, 3. [6118

EAST AFRICA. Several vacancies for young Architectural Assistants approaching final R.I.B.A. standard. Salaries up to £660. Apply with full personal and professional details for further particulars to Overseas Technical Service, 5, Welldon Crescent, Harrow. [6108

SENIOR ARCHITECTURAL ASSISTANT required in Northern Rhodesia, preference given to Member R.I.B.A. and T.P.I. with specialist knowledge of domestic Architecture, particularly relating to small dwellings. The successful applicant will be required to design and prepare drawings, details, Specifications and Contract documents in Lusaka for a number of small housing Contracts over the Territory, and to take the lead in supervising the Contract work, on behalf of a newly formed Housing Society. Commencing salary £1,500 p.a. plus travelling expenses and assistance with housing. Reply with full details, to The Manager, P.O. Box 420, Lusaka, Northern Rhodesia. [6109

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PLASTERER'S surveyor and estimator required by W. G. Venn & Sons, 2, Laburnum Villas, Park Rd., Hayes, Middlesex. Write, stating full particulars and salary required. Only those with experience need apply. [6100

QUANTITY Surveyor required by firm of Engineers to the Building Trade in Birmingham area, primarily for the preparation and finalising of accounts. Salary £650 upwards according to experience. Reply with full details to Box 6388. [6107

NORTH THAMES GAS BOARD. Surveyor's Clerk, aged 23 to 25, required to assist Estimator in preparation of approximate estimates, checking contractors' estimates, working up, etc. Starting salary at the rate of £335—£370 per annum according to age. Applications, giving age and full particulars, should be sent to the—Staff Controller, North Thames Gas Board, 30, Kensington Church St., W.8, quoting reference number 666/5. [6117

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